



**DOCTOR OF
PHARMACY
PROGRAM**

**COVID-19
VACCINATION IN UAE**

**MARINE SPONGE
IS A PROMISING NATURAL
SOURCE OF ANTI-SARS-COV-2
SCAFFOLD**

**FLAVONOIDS ARE PROMISING
SAFE THERAPY AGAINST
COVID-19**

**COLLEGE
NEWS**

**STUDENT
PROJECTS**

AN INVITATION TO WRITE ILLUMINATE..SHARE



We are very pleased to open this opportunity for all of you to spread your accumulated wisdom and knowledge to benefit others.

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- The article content has to fit the topic presented in Sharjah pharmacy forum.
- The article should have valid content.
- The article should be between 1 to 3 pages in length (font: time new roman- size: 12).
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Prof. Karim El Zu'bi
Dean, College of Pharmacy
University of Sharjah

WELCOME

Dear Reader

With pride and pleasure, we are pleased to present to you the twelfth issue of the Sharjah Pharmacy Forum magazine, which comes as a result of the hard work of the students of the College of Pharmacy under the support, supervision and efforts of their professors.

The topics for this issue have been carefully selected to address important health issues of interest to students, health care providers and individuals. The family of the College of Pharmacy at the University of Sharjah presents this issue to you to be a valuable addition to every library and hopes that you will enjoy reading through it.



MY EXPERIENCE AS A STUDENTS MAGAZINE COORDINATOR

Noor Maarouf

At the beginning, I participated in the students scientific association as a member to gain the experience. I never thought that I would be in charge as a student coordinator of the CoP Magazine. It was absolutely challenging, but I loved every moment of it. Interviewing our Doctors and students, documenting events throughout the year and meeting new people.

What was impressive to me when Dr Manal contacted me personally to be in charge of the magazine. Seeing my hard work pay off was really a proud moment for me.

I got the chance to do something amazing not only once, but twice. Following my graduation, I put the CoP Magazine participation in my CV. While interviewing for jobs, it indeed payed off. My interviewers were thrilled to know that I had such an experience. And for that, I urge you to take this step. Savor it and enjoy it.





Pharm.D Program

College of Pharmacy In Collaboration With
College Of Graduate Studies **New Program 2021/2022**

Aim of the Program:

To prepare students for professional roles in the area of pharmacy, with the knowledge and skills to advance the discipline from the academic, research and practical standpoints. The Pharm.D program will prepare the students to address the current and future challenges in several areas including patient care, health promotion, research and development, management and investment in patient health, and academic positions.

Degree Completion Requirements

Duration: Two years program

Requirement to graduate: a total of 72 credit hours

Entry Requirements:

The Doctor of Pharmacy degree (Pharm.D) is available to students who meet the requirements for admission, as follow:

1. Hold a Bachelor of Pharmacy degree from a recognized university by the Ministry of Education in the UAE, with a minimum cumulative GPA of 3 out of 4 or its equivalence.
2. The undergraduate degree must have been achieved by attending no less than 75% of the required period (Students with degrees obtained by distance learning will not be considered).
3. English Language Requirements:
 - The student must obtain at least 550 points on the TOEFL test or 6 or more on the IELTS.

Contact Us

For more information about the Pharm.D program application process, fees and application deadlines, Please visit the **website of the College of Pharmacy - University of Sharjah at:**
<https://www.sharjah.ac.ae/en/academics/Colleges/Pharmacy/Pages/Doctor-of-Pharmacy.aspx>
Phone: +971 6 505 7401 | **Fax Number:** +971 6 558 5812

- Native speakers of English shall be exempted from the TOEFL Test if the language of instruction in the first degree was English, and the degree was obtained from a country where English is the formal language. Exempted are also students who graduate from academic institutions where English is the medium of instruction.

Other Requirements:

- The student must submit a letter of approval by his/her employer if he/she is employed (The student should be able to attend as full time).
- Every candidate must pass the Placement Examination to be conducted by the college of pharmacy for evaluation of the candidate's background in pharmaceutical sciences.
- Every candidates who does not fulfil the needed course requirements will be needed to take remedial courses during the first year, for which no credit will be given towards the Pharm.D degree.

Job Opportunities for Pharm.D Graduates:

Besides having an advantage to be hired as a community pharmacist and medical representative, the Pharm.D graduates will be able to work as clinical pharmacists in the hospital and health centers. In addition, the graduates can work in Health authorities and pharmaceutical companies in different specialties including pharmacoconomics, pharmacovigilance, clinical trials, and medication safety. The graduates will also have a very good chance to join academia, as there is a high shortage in qualified Clinical Pharmacy and Pharmacy Practice faculty members all over the world.

Impacts of COVID-19 Pandemic on Geopolitics, Health, Economics, Education and Sociocultural Events.

By **Abduelmula R Abduelkarem** -Professor of Clinical Pharmacy and Pharmacy Practice

The number of active cases of COVID 19 and deaths is markedly escalating. The pandemic had affected almost every aspect of our lives including geopolitics, health, economics, education, and sociocultural events. However, besides the negative impacts of the pandemic there are some positive impacts as well, such as improving our awareness of the daily hygienic practices, emphasizing digital inequality, and increasing global collaboration in combating the crisis by intensifying scientific research to establish a promising vaccine.

One of the other positive impacts is the activation and use of online education, also raising awareness about close family relationships and much more. The outbreak of COVID-19, a disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARSCOV-2) occurred in an era characterized by advanced technology in mass media and communication resources. Such advances allowed people, in general, to follow the global news of this pandemic, be aware of its detrimental effects, and take protective measures as instructed by national and international health authorities.

However, the coin has two sides and digital inequality sprang up where lack of technologies limited the access of certain populations to advanced technologies and

reduced their educational knowledge and information regarding the pandemic, governmental restrictions, and protective measures to be taken to combat the crisis [1-3].

On the other hand, the crisis had a positive impact on population where technologies are available as it provoked a tendency to technology illiterate people to put an effort to learn the basic skills to enable them to use of such technologies for work from home, social interaction, information follow up and educational purposes. It has been suggested that despite the major impact they are having on the spread of the epidemic, dealing with digital inequalities is currently not receiving enough attention from decision makers [4].

Measures taken by governments such as shutdowns of not only international borders but also borders within each country to isolate the hard hit areas by the pandemic have remarkably reduced the spread of the virus. However, despite the first declaration by the World Health Organization (WHO) that described the pandemic as a global emergency in January, 2020 [5], and the restrictions set by health authorities such as stay home, wearing masks and gloves, safe distancing, and avoidance of group ceremonies, many

countries witnessed ignorance of such measures by their people. Such attitude significantly increased the number of active cases and consequent deaths. Some countries across the globe took the matter lightly at the beginning of the global outbreak and even bragged of being free of cases to be struck later by the outspread of active cases and their health situation was worsened more by their lack of facilities to screen their own population. Still data from such countries remain unreliable due to the previous reasons and the clinical features such as the incubation period of almost two weeks during which cases may become asymptomatic. The dilemma of COVID 19 pandemic had been further worsened by the wide and wild emergence of various treatment regimens advocated by various health authorities across the globe and by health professionals and non-health individuals including high rank international officials.



In conclusion, the COVID 19 pandemic influenced almost every aspect of our daily life. It changed, among others, the facet of health, geopolitics, economy, education, movement, and social aspects. However, the disaster alarmed us of measures to be prioritized in any national and international strategies for a safer future. The world had suffered and still suffering a great deal of the negative impacts of the pandemic but the lessons we learnt are of great value in combating unpredictable future disasters of the kind. The burden in the present fight should not be carried on by only health authorities but by all private and public organizational sectors. The public must actively contribute to the efforts of fighting the pandemic by strictly following the directions of their health authorities and actively contribute to their national strategies for the post COVID 19 pandemic.

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Untargeted metabolomics applied for the search of prognostic biomarkers of COVID-19 disease progression

Mohammad Semreen, Nelson Alexandre Da Cruz Soares, and Rabih Halwani

According to the Metabolomics Society website (<http://metabolomicssociety.org/>) metabolomics is defined as follows “comprehensive characterization of the small molecules metabolites in a biological system”. Metabolomics is now recognized as an emerging analytical tool in the biomedical context allowing us to investigate the contents of a biological matrix at molecular level. Indeed in many cases changes in metabolism can be directly translated into biological conditions and/or inform of diseases like COVID-19. We are currently investigating the utility of plasma metabolome profiles as a potential parameter for risk stratifying of COVID-19 patients into five groups: healthy, asymptomatic, mild, moderate and severe individuals, as well as determining if there is any overlap between the metabolome of these body fluids and indicating uniqueness of each one. With this in mind, the goal of our research is to identify early indicators of COVID-19 disease progression that will allowing us to treat patients in a timely and adequate manner. Using personalised medicine to treat COVID-19 patients would be a huge step forward. For this purpose, the study employs the state-of-the-art trapped ion mobility spectrometry time-of-flight (TIMS-TOF) mass spectrometry technology combined with downstream bioinformatics analysis using MetaboScape (v4).



Telepharmacy: The new emerging opportunity to improve the pharmacist role in patient care

Dr. Osama H. Ibrahim, Associate Professor of Clinical Pharmacy

The spread of coronavirus disease 2019 (COVID-19) has overwhelmed public-health and health-care systems worldwide.

1 Correspondingly, COVID-19 has posed new challenges for the health-care systems of both developed and developing countries

2 In particular, many countries have combated the pandemic through adopting response strategies to flatten the contagion curve by implementation of restrictive measures, including early diagnoses, prompt isolation for suspected individuals and health quarantine for confirmed cases, and initiation of infection-control measures.

In this context, telepharmacy falls under the umbrella of telemedicine, and refers to providing pharmaceutical services within the scope of a pharmacist's responsibilities, with a temporal and spatial distance between patients as the consumers of health services and health-care providers.

Remote pharmacist interventions have achieved much more attention during the coronavirus disease 2019 (COVID-19) outbreak, since they reduce the risk of transmission and can potentially increase the access of vulnerable populations, such as patients with COVID-19, to pharmaceutical care.

This study aimed to examine differences in rates and types of pharmacist interventions related to COVID-19 and medication dispensing errors (MDEs) across community pharmacies with and without telepharmacy services.



Our study was a prospective, observational study conducted over four months (from March 2020 to July 2020) in 52 community pharmacies (26 with and 26 without telepharmacy) across all seven Emirates of the UAE. A standardized data-collection form was developed to include information about patient status, pharmacist interventions and MDEs. The study results revealed that rates of MDEs and their subcategories, prescription-related errors and pharmacist counselling errors were lower in the pharmacies that offered telepharmacy compared to the pharmacies that did not offer the telepharmacy services (P-value < 0.05).

The shown diagram describes how Telepharmacy works to improve pharmacist role in patient care by keeping a remote active Pharmacist-Patient interaction during the COVID-19 pandemic.

HOW YOUR TELEPHARMACY WORKS



STEP 1

Drop off your prescription in person or have your doctor electronically send it to us.



STEP 2

The technician will take photos of the written copy of the rx as well as photos of the actual medicine they are dispensing.



STEP 3

A pharmacist working in a remote location will look at the photographs and verifies via software that the correct medicine is being dispensed.

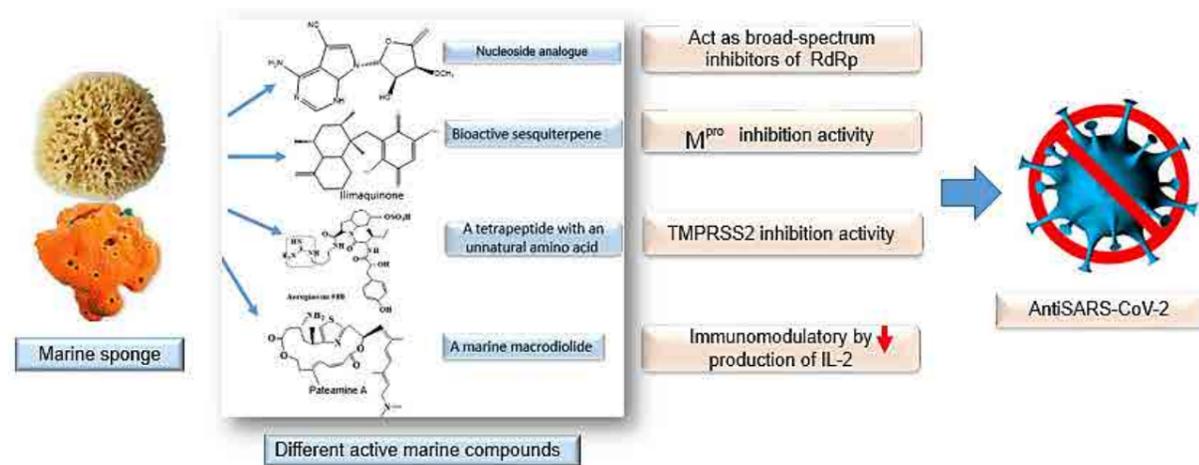


STEP 4

Once verified, the medication is ready to be picked up by the patient. You can speak to your pharmacist via webcam if there are any questions.

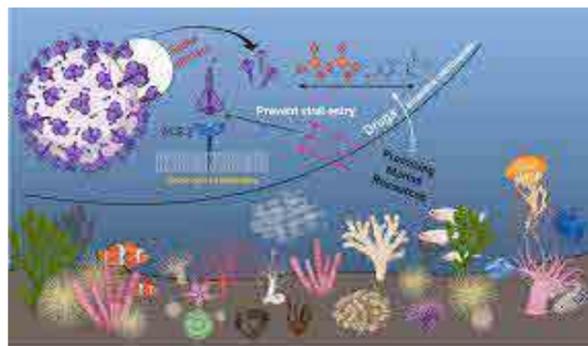
Marine Sponge is a Source of Scaffold against COVID-19

Alshaimaa Hamoda, Bahgat Fayed, Naglaa S Ashmawy, Abdel-Nasser A El-Shorbaji, Rania Hamdy, Sameh SM Soliman



The marine sponge is a rich source of compounds with unique activities. FDA has approved ocean-derived drugs for HIV, herpes and now for COVID-19. Marine sponge produces different classes of compounds that can inhibit SARS-CoV-2 by targeting vital enzymes including RDRP, Mpro, Serine protease and also act as immunomodulatory through inhibition the massive cytokine production. NIs (nucleoside analogue inhibitors) are known as broad-spectrum inhibitors of RdRp. Mycalisine A, and B are nucleosides analogues isolated from marine sponge Mycale sp. and employed as scaffold for the development of NIs following structure modification by the inclusion of CN group. A bioactive sesquiterpene Ilimaquinone,

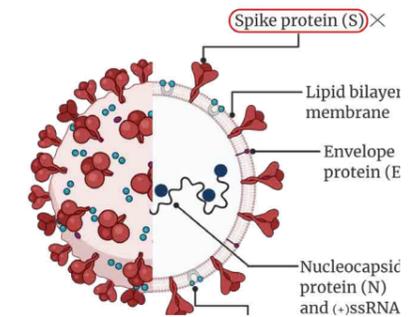
isolated from the Hippospongia metachromia sponge showed potential inhibitory activity against SARS-CoV-2 cysteine protease (Mpro). TMPRSS2 is a human serine protease enzyme used by the virus for its activation and cell entry. Aeruginosin 98B, isolated from the marine sponge Microcystis aeruginosa, showed potent inhibitory against serine protease. Pateamine A was isolated from Mycale sp. and showed selective inhibition activity on the production of the cytokine storm at severe stages are required to manage SARS-CoV-2 infection. Eventually, marine sponge -derived several metabolites showed promising and potent anti SARS-Cov-2 activity.



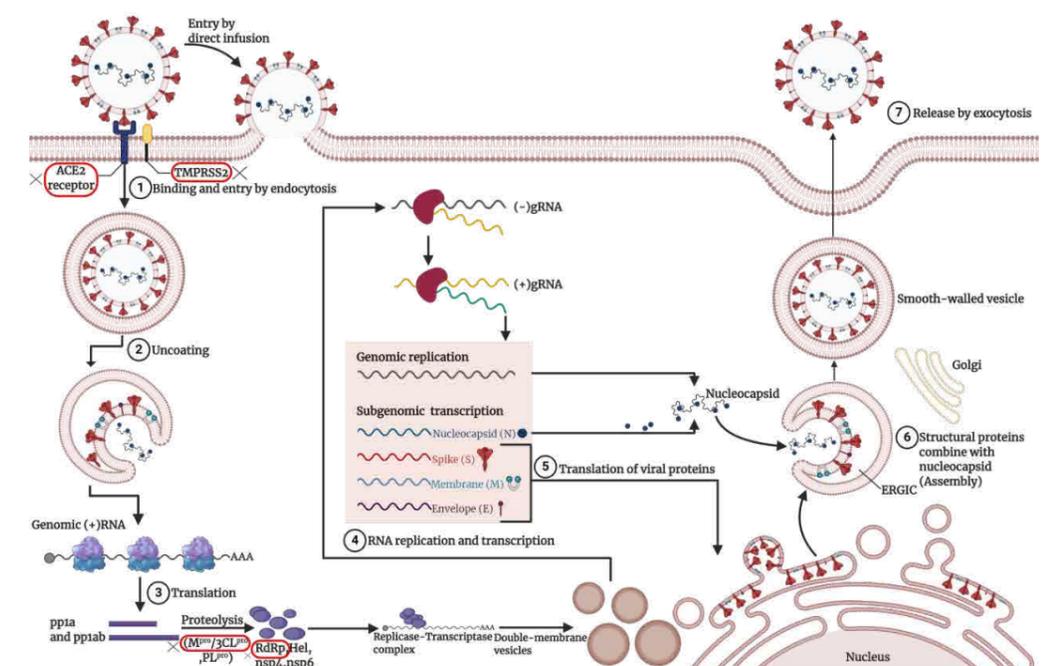
Flavonoids are promising safe therapy against COVID-19

Sara Mahmoud Abo Al Joud, Neda Naser Khademi, Fatemah J K T Alkhatat - Supervised By Dr Sameh Soleiman.

Flavonoids are a class of phenolic natural products, well-identified in traditional and modern medicines in the treatment of several diseases including viral infection. Flavonoids showed potential inhibitory activity against coronaviruses including the current pandemic outbreak caused by the severe acute respiratory syndrome coronavirus 2 (SARSCoV-2) and designated as COVID-19. In our study, we have collected all data related to the potential inhibitory mechanisms of flavonoids against SARS-CoV-2 infection and their significant immunomodulatory activities. The data were mapped and compared to elect major flavonoids with a promising role in the current pandemic. Further, we have linked the global existence of flavonoids in medicinal plants and their role in protection against COVID-19. Computational analysis predicted that flavonoids can exhibit potential inhibitory activity against SARS-CoV-2 by binding to essential viral targets required in virus entry and/or replication, including Mpro, RBD of the S protein, RdRp, in addition to the human ACE-2 receptor and TMPRSS2. Flavonoids also showed excellent immunomodulatory and anti-inflammatory activities including the inhibition of various inflammatory cytokines. Further, flavonoids showed significant ability to reduce the exacerbation of COVID-19 in the case of obesity via



promoting lipids metabolism. Moreover, flavonoids exhibit a high safety profile, suitable bioavailability, and no significant adverse effects. The data described in this study strongly highlighted that flavonoids particularly quercetin and luteolin can exhibit promising multi-target activity against SARS-CoV-2, which promote their use in the current and expected future outbreaks. Since plants rich in flavonoids are globally distributed and can offer great protection from COVID-19, a preventive safe regimen can be recommended against SARS-CoV-2 following further clinical investigations.

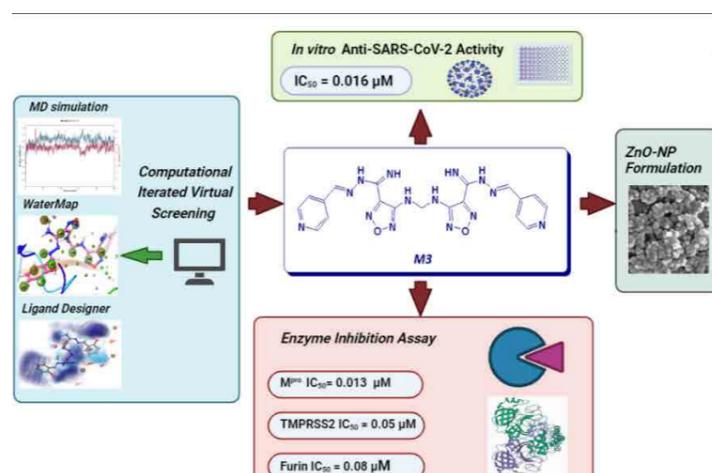


Discovery of Novel Promising Anti-SARS-CoV-2 with Dual Activity

Rania Hamdy, Bahgat Fayed, Ahmed Mostafa, Noura M Abo Shama, Sara Hussein Mahmoud, Chetan Hasmukh Mehta, Yogendra Nayak, Sameh S M Soliman

COVID-19 is still a threat to humankind and has a dramatic impact on human health, social life, the world economy, and food security. With the limited number of suggested therapies under clinical trials, the discovery of novel therapeutic agents is essential. Here, a previously identified anti-SARS-CoV-2 compound named Compound 13 was subjected to an iterated virtual screening against SARS-CoV-2 Mpro using a combination of Ligand Designer and PathFinder. The obtained compounds that showed the best binding to Mpro were re-screened against TMPRSS2, leading to the identification of 20 shared compounds. The compounds were further visually inspected, which resulted in the identification of five shared compounds M1–5 with dual binding affinity. In vitro evaluation and enzyme inhibition assay indicated that M3, an analogue of Compound13 afforded by replacing the phenolic moiety with pyridinyl, possesses an improved antiviral activity and safety. M3 displayed in vitro antiviral activity with IC₅₀ 0.016 μM and Mpro inhibition activity with IC₅₀ 0.013 μM, 7-fold more potent than the parent Compound 13 and potent than the antiviral drugs that are currently under clinical trials.

Moreover, M3 showed potent activity against human TMPRSS2 and furin enzymes with IC₅₀ 0.05, and 0.08 μM, respectively. Molecular docking, WaterMap analysis, molecular dynamics simulation, and R-group analysis confirmed the superiority of the binding fit to M3 with the target enzymes. Loading M3 on zinc oxide nanoparticles (ZnO NPs) increased the antiviral activity of the compound 1.5-fold, while maintaining a higher safety profile. In conclusion, lead optimized discovery revealed a novel compound named M3 with promising dual activity against SARS-CoV-2. The compound deserves further investigation for potential clinical-based studies.



Spike protein: Critical Role in SARS-CoV-2 Infection

Azizeh Tariq Alsayyid, Aminah Samer Alchakee, Nadin Hatem Ali Saber Sarg
Supervised: Dr Sameh Soliman

What is the key protein possessed by SARS-CoV-2 that allows viral entry?

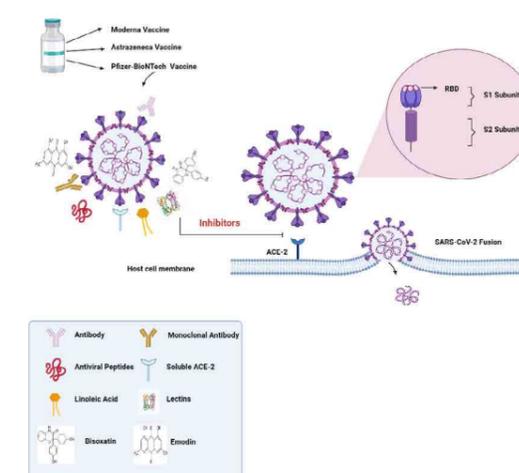
It is the Spike (S) protein. We have conducted a literature review to summarize, analyze, and interpret the available scientific data related to SARS-CoV-2 Spike (S) protein in terms of its structural features, essential role in pathogenesis and use in vaccines development and potential therapies.

Additionally, we have identified the future perspectives and predictive measures for SARS-CoV-2 S protein mutations, since future planning is essential to identify and restrict the spread of potential new variants. COVID-19 pandemic has emerged as a result of infection by the deadly pathogenic severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), causing enormous threats to humans.

Coronaviruses are distinguished by a protruding, clove-like spike protein, which plays a key role in viral pathogenesis, mutations, and transmission. It is a glycoprotein that is responsible for viral binding to the host cell and fusion through the ACE-2 receptor. A considerable number of potential natural and synthetic therapies were proposed based on S protein. These include natural products, such as linoleic acid, repurposed products, such as bisoxatin, antiviral peptides, natural lectins, and recombinant soluble ACE-2. Some neutralizing monoclonal antibodies were recently approved for emergency use as well, including the use of Casirivimab and Imdevimab combination, and the use of Bamlanivimab in combination with Etesevimab.

All of which inhibit the viral entry mediated by the S protein. Furthermore, due to its strong immunogenic properties, several vaccines utilizing the S protein were developed including, Moderna, Pfizer, AstraZeneca, Jhonson, Novavax, and CureVac's vaccines. Although the efficacy and safety of these therapeutics and vaccines are still controversial, they can reduce SARS-CoV-2 infection and transmission rates, leading to a significant mitigation of the global health burden of this pandemic.

For the full article visit:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8326314/>



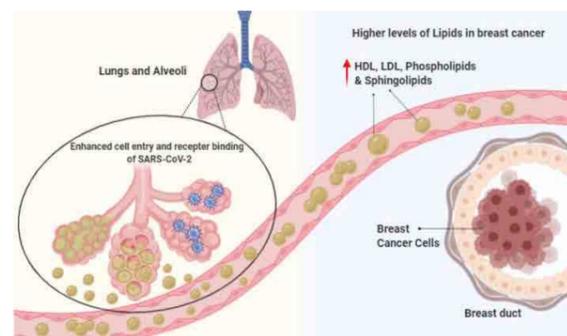
Hypothesized correlation between breast cancer and SAR-CoV-2 infection

By: Sarra B Shakartalla, Razan B Alhumaidi, Ola DA Shammout, Zainab M AL Shareef, Naglaa S Ashmawy
Supervised By: Dr Sameh Soleiman

Breast cancer (BC) is the most diagnosed and second leading cause of death among women worldwide. Elevated levels of lipids have been reported in BC patients (1). On the other hand, lipids play an important role in coronavirus infection including the newly emerged disease caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and designated COVID-19 by WHO, as they are required in all virus life cycle process including attachment, entry and envelop formation (2).

It has been reported that cancer patients are at higher risk of contracting SARS-CoV-2 infection, which is mainly attributed to the immunosuppressive status of cancer patients along with the use of cytotoxic drugs (3).

We have described dyslipidemia associated with BC patients as a risk factor that may have a significant effect on the incidence and severity of SARS-CoV-2 infection. BC patients are accompanied with elevated levels of lipids namely phospholipids, cholesterol, sphingolipids, and eicosanoids. Infection with SARS-CoV-2 may result in vasculopathy causing leakage of these lipids into the lung space, thus facilitating the attachment of SARS-CoV-2 to its receptors, and hence entry and replication. Therefore, management of BC-associated dyslipidemia is an important strategy to reduce the infection due to SARS-CoV-2.



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COVID-19 Vaccination in the UAE

Marwa Magdy | Students | Year 5

As we know, it's been almost a year and half struggling, coping & trying to live with this pandemic & yet it somehow a hot topic in the News. So, let's take a look at the different vaccines available for COVID-19 vaccination in the UAE. Vaccinations could be the best way to defeat this pandemic, and the higher the level of vaccination in the community, the higher the percentage of immunity in this community.

What are the available vaccines in The UAE?

The current approved COVID-19 vaccines in the country are SARS-CoV-2 Vaccine Inactivated Vaccine (Sinopharm), mRNA (Pfizer/BioNTech) and the Sputnik V.

1. Sinopharm: A Vaccine Made From Coronaviruses

By teaching the immune system to make antibodies against the SARS-CoV-2 coronavirus. The antibodies attach to viral proteins, such as the so-called spike proteins that stud its surface. Once vaccinated, the immune system can respond to an infection of live coronaviruses. Sinopharm's COVID-19 Vaccine Shows 86% Efficacy, UAE Health Agency Says.

2. Pfizer-BioNTech Vaccine: A Piece of Coronavirus

Pfizer-BioNTech vaccine is based on the virus's genetic instructions for building the spike protein. An interesting fact about Pfizer-BioNTech Vaccine is that it contains an mRNA inside an oily shell, why? As we may heard, the vaccine uses messenger RNA, genetic material that our cells read to make proteins. mRNA molecules are fragile and would be chopped to pieces by our natural enzymes if it were injected directly into the body. To protect their vaccine, Pfizer and BioNTech wrap the mRNA in oily bubbles made of lipid nanoparticles.

The antibodies that are formed after injection can latch onto coronavirus spikes, marking the virus for destruction and preventing infection by blocking the spikes from attaching to other cells.

The Pfizer-BioNTech vaccine requires two injections, given 21 days apart, to prime the immune system well enough to fight off the coronavirus. But because the vaccine is so new, researchers don't know how long its protection might last. A clinical trial demonstrated that the vaccine has an efficacy rate of 95 percent in preventing Covid-19.



Figure 1 Sinopharm: A Vaccine Made From Coronaviruses

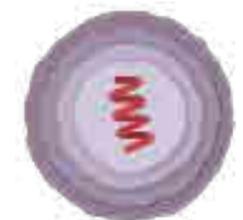


Figure 2 Lipid nanoparticles surrounding mRNA

3. Sputnik vaccine:

It is Russia's first approved vaccine & it was developed and produced entirely domestically. Researchers used common cold viruses in their vaccine prototype. Notably, they opted for two different adenovirus vectors (rAd26 and rAd5) delivered separately in a first and second dose, 21 days apart.

You may be wondering why they are using 2 diff different adenovirus vectors?

Because using the same adenovirus for the two doses could lead to the body developing an immune response against the vector and destroying it when the second dose is administered. Two different vectors reduce the chance of this.

And now the most important question: Should I take COVID-19 vaccine?

- COVID-19 vaccination will help keep you from getting COVID-19.
- COVID-19 vaccination will be an important tool to help stop the pandemic.
- COVID-19 vaccines are safe and effective.
- None of the COVID-19 vaccines can make you sick with COVID-19.

And as the saying says: Prevention is always better than cure. Together, hand by hand, we may be able to find an end to this pandemic.

Vaccines Summary:



BBIBP-CorV Sinopharm \$\$\$

Inactivated Virus Vaccine
SARS-CoV2 is chemically inactivated (with a chemical called beta-propiolactone) so it cannot replicate but all the proteins remain intact.

Efficacy: 79% (original strain) vs --% (B1.351 "SA" variant)

Dosing: 2 doses - 21 days apart

Storage: +2-8°C

@LaPijetta.labs
Last updated on 01/03/21

BNT162b2 BioNTech/Pfizer \$\$\$

Encapsulated mRNA Vaccine
mRNA encoding for the Spike protein is protected in a lipid nanoparticle (like a soap bubble). Once absorbed, the cell expresses the Spike protein resulting in an immune response.

Efficacy: 95% (original strain) vs --% (B1.351 "SA" variant)

Dosing: 0.3mL - 2 doses - 21 days apart

Storage: -70°C - 6 months
+2-8°C - 5 days

@LaPijetta.labs
Last updated on 01/03/21

Sputnik V / Gam-Covid-Vac Gamaleya (Sputnik V) \$

Viral Vector Vaccine
dsDNA encoding for the Spike protein is protected in a safe virus. The infected cell expresses the Spike protein which leads to an immune response.

Efficacy: 91% (original strain) vs --% (B1.351 "SA" variant)

Dosing: 0.5mL - 2 doses - 21 days apart

Storage: +2-8°C - 6 months
-20°C - 2 years

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Last updated on 01/03/21

References:

- <http://covid19.ncema.gov.ae/en/page/about-the-vaccine>
- <https://www.nytimes.com/interactive/2020/health/sinopharm-covid-19-vaccine.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/vaccine-benefits.html>

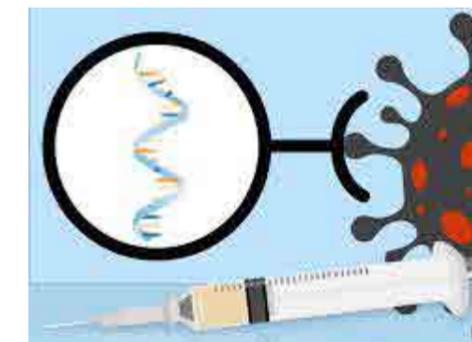
“Faculties at the College of Pharmacy in the University of Sharjah collaborating internationally to explore the potential of delivering COVID vaccine through the oral mucosa using nanotechnology to accelerate global vaccination”

By Dr. Mark Rawas Qalaji

Starting December 2019, a new and highly pathogenic “severe acute respiratory syndrome coronavirus-2” (SARS-CoV-2) out broke in Wuhan city, Hubei province, China that quickly spread nationwide and eventually worldwide. As of July 15, 2021, more than 4 million people have died globally and about 18 million active cases were reported. To that date, six vaccines have been developed and approved for human use. However, the current production and supplies are unable to meet the global demands to immune the entire world population. Only a few countries were able to successfully vaccinate many of their residents.



Therefore, an alternative vaccine is urgently needed that can be prepared in easy manner, cost-effective, can be preserved and transported in room temperature. The use of nano or microparticulate vaccines could address most of these limitations as they are stable at room temperature, inexpensive to produce and distribute, can



be administered orally, and does not require cold chain storage for transportation or preservation. The particulate vaccines can be administered as solution form orally or in film dosage form in sublingual or buccal area. Besides patient compliance, the major advantage of oral, sublingual, and buccal routes is that these can illicit mucosal immunity. Mucosal immunity along with systemic can be a strong defense against SAR-CoV-2 as the virus mostly enter the system through inhalation or saliva.

Our Drug Delivery team from the College of Pharmacy at the University of Sharjah is collaborating internationally with the College of Pharmacy at Mercer University, USA to explore the possibility of developing a nano or micro particulate SARS-CoV-2 vaccine for oral, sublingual or buccal administration to accelerate global vaccinations.

Behind the scenes of getting our graduation project published in a scientific journal

By: Munazza Ahmed

When my group members and I started brainstorming for our graduation project, we knew our focus had to be on a relatively novel subject that would fascinate not only us but also experts within the field. That was when we stumbled upon CRISPR. Initially reading up about its controversial baby scandal, we decided to look further into the technology that had not yet captivated our amateur minds, uncertain whether we would really end up writing about this. However, once proposed, our project supervisor Dr. Rania Harati was more than most supportive with the idea. To further add context to our project, we coupled our topic with the most common malignancy found in women - breast cancer.

Writing the introductory draft was the most difficult part of the project which took us a not-so-mere one month to compose. Partly because communication during lockdown was challenging, but mostly because initially, it took us longer than usual to understand this new realm of science we had just thrown ourselves into. With Dr. Rania's Harati guidance, however, we were able to construct our draft smoothly. After each draft was sent for her approval, a thumbs up was given from her to continue writing, and we did.

In a nutshell, the Clustered Regularly Spaced Short Palindromic Repeats or CRISPR for short, is a system that evolved in bacteria to fight off viral infections. This adapted immunity helps fend off viruses threatening bacteria's existence. It does this by enabling bacteria to steal fragments of the invading viral DNA and store them as a memory if the virus decides to invade the bacteria again. Upon a viral invasion, the bacteria allows a protein called Cas9 to find the foreign DNA and cut it; rendering the invading virus inactive.

This system can be used to make cuts within the human DNA that will trigger cells to change DNA sequence during the inherent process of DNA repair; a fundamental basis

of CRISPR gene editing technology. With its relative affordability, versatility and accuracy, CRISPR can help scientists understand not only the dynamics with which breast cancer works in an individual, but also how it can be utilized in personalized medicine. Our literature review set out to understand how CRISPR had been doing just that in research labs around the world. By studying and summarizing breast cancer studies employing CRISPR technology, we were also able to bring forth new insights into the therapeutic applications of CRISPR/Cas9 in breast cancer.



Fast forward to the end of the semester, we successfully presented our graduation project to our thesis examiner Dr. Hany Omar and were acknowledged for our dedication and hard work by getting the review published in an open access journal.

We are grateful that Dr. Rania paved us a path for our first publication as undergraduate students. From being an inspiration to having full faith in our ability to compose an article worthy of publishing since our first meeting –to say we were blessed to have her supervise us would truly be an understatement. And to my fellow group members Grace and Asma, there isn't a single sentence in the article that has not undergone their intense scrutiny- without which our article would have been chaotic. Our resilience to work together through these times made us aware that even amidst a global pandemic, teamwork can make the dream work!



Interview with my Professor

“Make yourself enjoy and make yourself happy at the College of Pharmacy”.

“In general, pharmacy students are unique”

First, I would like to thank you so much for joining us today. It's a pleasure. We know your time is tight and making time for us really means a lot.

Q1) Starting our interview, can you please introduce yourself?

ANS: “I am Dr. Sameh Soliman. I am an associate professor at the CoP. In 2015, I joined the CoP at UOS in the United Arab Emirate.

Before 2015, I have been teaching and researching at University of California, LA, for 3 years, and before that I have been in Canada. I received my PhD in Canada, then I did some research for the government of Canada. After that I. oved to the US then I came to the UAE in 2015”.

Q2) Why did you choose pharmacy as a major and then as a career?

ANS: “I believe that every single pharmacist has a clue as to why he/she chose the CoP. As for myself, I have a different story. Early at the beginning of my high school, my relatives and all the people in my neighborhood have been talking, particularly my older brother. They were

talking about the medical field in general. And this made me very interested in the medical field, either CoP, College of medicine, dentistry and so on... However, later on, before the end of my high school, my relatives have been talking about medicine a lot. And I have heard from the news and from different people around me talking about drug discovery. The discovery of medicine is very very challenging, and developing medicine for people is a big issue, it is NOT easy.

In addition, to have the medicine in the market it is a long way and a long process, and myself, I always love to have a challenge. Therefore I focused my interest at the CoP.

One more thing, I have seen a lot of people talking about the CoP. It is good in relation to the medical field and the business field. Thus, you have 2 good opportunities. It is an integrated career”.

Q3) Do you regret your choice (choosing CoP)?

ANS: “No. NEVER! I love pharmacy and I always talk about it to my children and relatives. I feel like I succeeded in the pharmacy field. Alhamdulillah”.

Fourth Future Pharmacists Day

Marwa Magdy

Q4) What is your advice for the students who will join the CoP this year?

ANS: "My advice to the students just joining the CoP is to make yourself enjoy and to make yourself happy. This is the most important thing. Let me tell you something really important as I have studied and worked in so many universities, UOS is very very comparable to other universities.

This is a really important thing to always remember. When you educate yourself and get information and knowledge from your professors or instructors, "ENJOY". Make friendships, communicate with friends either in the CoP and outside the CoP, in the medical field and outside the medical field. Make friendships as much as possible and get the knowledge, then code it so you can use it later on.

So, this is my advice, enjoy, be happy, make friendships, communicate and read more about your field".

Q5) WWhat would you say to students who only focus on academics and neglect their social life?

"This is not a good idea at all. You have your own activities. You have to know your colleagues. This is really important.

As I mentor students, I tell them that I remember one student who I believe is a senior now. She came to me and told me that I would like to focus on academia and raise my GPA. I told her this is not a good idea. Although academia is really important, but I also have your colleagues who achieve so many activities and yet they maintain an excellent GPA.

Thus, there is no conflict in doing activities, going on trips and academia. Actually, both balance each other. Activities provide to the students lots of skills which will help them later on as they search for jobs.

I remember a friend of mine in Toronto, Canada. He has a company, and he is trying to hire employees. He received CVs from different people having PhD, master degrees and so on... however, he is looking for skilled people. People who did lots of activities and are good with communication. And let me tell you something important, communication skills and activities are really important to build your own personality in the field and later on".



Associate Prof. Sameh Soleiman
Medicinal Chemistry Department,
College of Pharmacy

Q6) What is your advice for 2021/2022 graduates?

"It is really challenging nowadays for students to graduate in a market that is somehow saturated. So, get out of the idea of being just a pharmacist and try to generate your own business. I keep on saying this, pharmacy students when they graduate, I call them scientists as they are full of knowledge from different subjects and topics.

If you compare yourself with any student on campus, you will find that you are studying biology, chemistry, business and management (many businesses, mathematical and medical stuff). This builds a lot of knowledge.

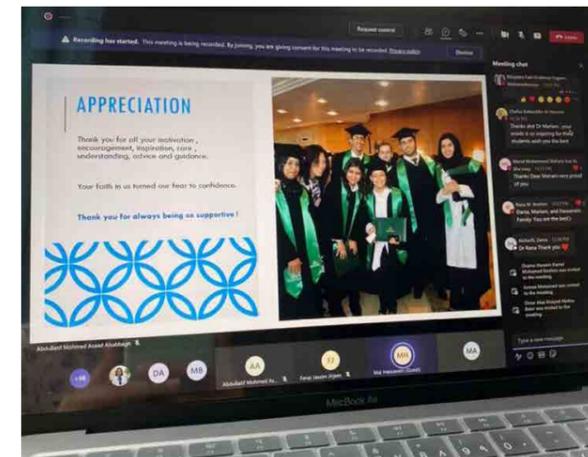
My advice to the students who are graduating is to build your own job. HOW? Think about startup companies which I believe students like you will make them bigger. Like formulation.

One of our projects is building new formulas. People start this way and build their own formula which is now sold in companies. And when these formulas are coming from pharmacists, this will build more trust from patients. Try to find your own path by having a startup company either in medicine or cosmetics and so on.. And of course, I wish them all the good luck

The 4th FPD was different from any other year as it was virtual. All the SSCP members worked very hard to represent the event in an extraordinary manner. The event begun with the UAE national anthem followed by the Holy Quran recited by Mohamed Hassan. After that we got to listen to the Vice-Chancellor speech by Dr Qutayba which was very heartwarming.

And of course, our dean Dr Karim El-Zubi gave a wonderful speech as well! Our SSCP members worked very hard throughout the years and so to appreciate them we viewed an achievement video of the SSCP. This video showed the tremendous efforts that the SSCP members accomplished. Although the event was virtual, students still virtually participated in posters and presentation competition. The honors were awarded during the virtual event. Students Munazza Ahmed Aftab, Grace Hope Daoud, and Asmaa Mohamed won the 1st place in the poster competition. Student Marwa Magdy won the 1st place in the presentation competition. We couldn't be prouder of our students!

To make the event livable and fun, the SSCP arranged an interview with previous/ex SSCP members Mouna Aref and Basmala Hosam. This interview highlighted the

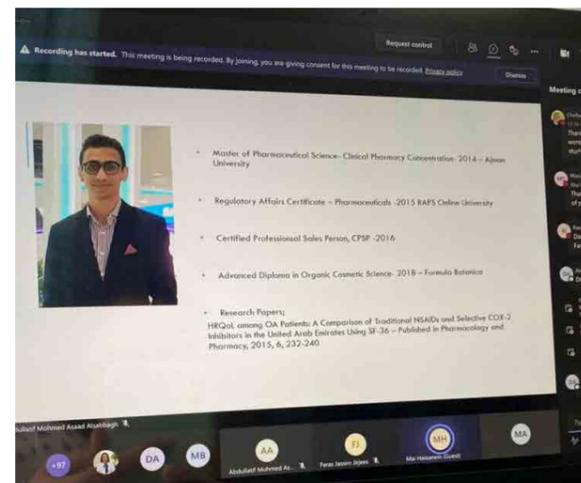


importance of participation in events and activities. Moving on, the most awaited and significant part in the event was the "alumni speech" which was personally supervised by Dr Feras Jirjees. Graduates from CoP came and spoke about their experiences in the field and their memories in the CoP.

Bilal Omar Alkubaisi who graduated at the peak of Covid-19 discussed his accomplishments since his graduation. He advised the students to follow their dreams no matter the circumstances! Diana Al Charfli who is a cancer survivor talked about her experience and the hardships she faced. She gave an emotional and heartbreaking speech full of courage and bravery. Her friend Mariam El Bahnasawi also gave a remarkable speech.

The final speakers, the "Magdy Family" Mai, Maha and Mohammed Magdy also participated in the alumni speech program. They graduated from CoP and told us about their business program in the pharmacy field. It was very informative especially for the students who were thinking of following this path.

And lastly, we had to say farewell to our 2021 seniors from the CoP. Our seniors shared their best memories with us in the college, their hardships, and of course their achievements. Best of luck in the future 2021 seniors!



That's a recap of the 4th FPD. No matter how hard it was to arrange it as a virtual event, it was defiantly worth it! We can't for 5th FPD!

The International Conference for Pharmacy and Medicine (ICPM) was held from 7th -9th of April 2021 in the new Sharjah Research Technology and Innovation Park in United Arab Emirates in Sharjah. "The ICPM is aiming to encourage the national and international Healthcare providers and Hospitals to develop Healthcare sector and Medical Tourism in UAE" said by Dr. Abdalla AlKindi. The ICPM started for the first time by support from the University of Ajman in 2017.



It collaborates with prestigious universities all over the UAE in order to spread the knowledge between different healthcare providers and students. In 2019, the ICPM was held in the University of Sharjah. It covers many different topics including medical, dental, insurance, pharmacy education, regulatory affairs, bioequivalence studies, pharmacovigilance, and much more. ICPM opens the window to many different companies as well as students and healthcare providers to connect together. It promotes, supports, and facilitate the medical tourism in the UAE. It connects between students from different universities to come into contact and share their experiences together and expand their knowledge as well as their acquaintances.



There was in the ICPM a variety of lectures as well as workshops where students as well as healthcare providers can attend and benefit from one another. The lectures and workshops provided were from healthcare professionals of different background as well as from different countries which allowed the students and the people who attended to broaden their knowledge and learn new things and advances in pharmacy and medicine not only within the UAE but all over the world.

The students from different universities within the UAE were able to present their work as there was a poster competition where the students were asked to present a poster of their work that was assessed by judges from different backgrounds. The University of Sharjah students were a key part of the ICPM. They had a booth in the ICPM done by the scientific society which represented the College of Pharmacy and its accomplishments.



Ajman University of Science and Technology.

The competition was held by Dr. Hamzah Al Zubaidi, who is a professor at the University of Sharjah. It was a friendly competition based on pharmacy knowledge and questions from different subjects ranging in difficulties from easy to hard.

The competition brought out a nice environment and it made each university students route for their own team which was a pleasant atmosphere. Also, the audience were engaged in this competition testing their own knowledge. In my opinion, The ICPM brought people who haven't seen each other in a long time due to COVID together and it provided a great opportunity for students as well as people from different medical backgrounds to come together and learn from each other.



There was a video playing done by the scientific society explaining about the COVID virus. The booth was vibrant, and the students were welcoming anyone who approaches handing out a catalogue of the College of Pharmacy as well as explaining about the new PharmD program that opened up in the University of Sharjah. The booth had also a fun corner which included the photo booth for anyone who wishes to take pictures with different signs to keep them as a memory for the event. Students from the University of Sharjah were also they were responsible for the organization of this event and making sure that the event is taking place as it should.

There was the interuniversity competition between four universities across the UAE. The competition was between the University of Sharjah, CUCA, University of Ajman, and



Glimpses of World Diabetes Day on Microsoft Teams

World Diabetes Day (WDD) was created in 1991 by IDF and the World Health Organization in response to growing concerns about the escalating health threat posed by diabetes. World Diabetes Day became an official United Nations Day in 2006 with the passage of United Nation Resolution 61/225.

It is marked every year on 14 November, the birthday of Sir Frederick Banting, who co-discovered insulin along with Charles Best in 1922.

In view of the importance of spreading awareness due to the growing concerns about the escalating health threat that diabetes poses to societies worldwide, the College of Pharmacy at the University of Sharjah is keen on celebrating this event every year.

This year the world diabetes day in the college of pharmacy, university of Sharjah was held virtually through Microsoft teams, the College of Pharmacy organized a scientific day to celebrate this occasion along with activities to raise awareness of diabetes.

The event started with a welcoming speech by Prof. Rafat Al Awady, then our amazing speakers gave a short presentation, Dr. Maha Saber “tight glycemic control for diabetic patients: when is it needed?”, Dr. Hamzah Alzubaidi “new role of pharmacists in providing care for people with diabetes”, and Dr. Nadia Al Mazrui with the topic of “influence of pharmaceutical care on health outcomes in patients with type 2 diabetes mellitus”. Lastly, Dr. Hamadah Tarazi ended this unforgettable day by announcing the winners in the diabetes awareness activates and student posters.



The First Defense Master Thesis Project at the College of Pharmacy

Mechanistic insight into autophagy in drug-resistant hepatocellular carcinoma

Hepatocellular carcinoma (HCC) is characterized by a poor prognosis and limited therapeutic options. Moreover, the emergence of multidrug resistance (MDR) hinders successful treatment. Autophagy is a self-degradative mechanism that could act as a survival mechanism in cancer. This work demonstrated that MDR HCC greatly depend on autophagy for survival.

Indeed, when HCC cells were under chemotherapeutic or metabolic stress, inhibiting autophagy caused more extensive cell death in the resistant cells compared to their parental counterparts.

The work also demonstrated that the autophagy inhibitor, spautin, acted synergistically with fingolimod to promote cell death. The combination treatment resulted in superior reactive oxygen species (ROS) production, induction of apoptosis, and greater effect against cell survival pathways like the Akt strain transforming (Akt) and extracellular signal-regulated kinase (ERK) pathways.

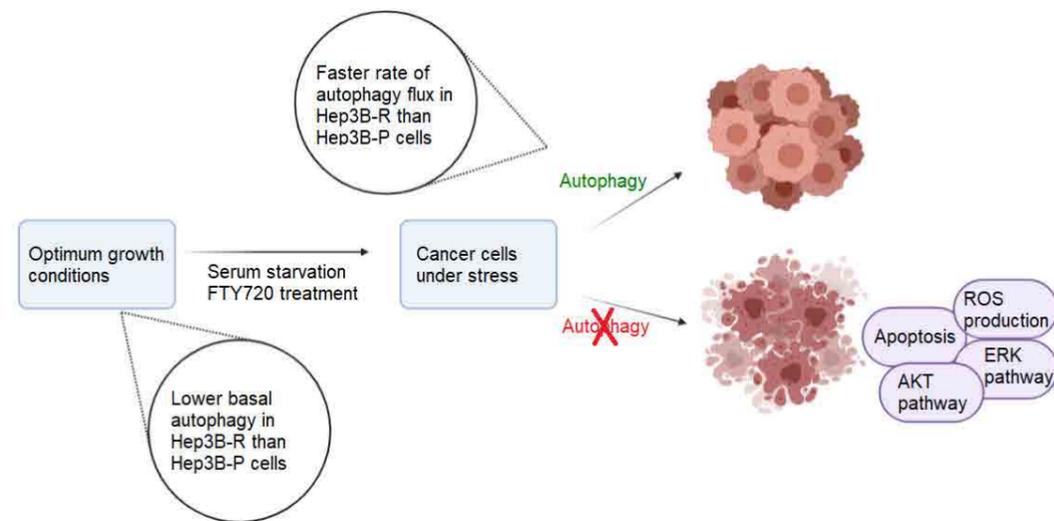
Collectively, this work revealed that combining spautin with chemotherapeutic agents that induce cytoprotective autophagy such as fingolimod is a promising approach to overcome MDR in HCC.



The combination of autophagy inhibitors with chemotherapeutic agents that induce cytoprotective autophagy is an emerging strategy known in enhancing the sensitivity to chemotherapy.

However, the role of autophagy in MDR HCC is not fully understood. The current work demonstrated that autophagy is differently regulated in parental and MDR HCC. Autophagy acted as an important defense mechanism against metabolic and chemotherapeutic stress in MDR HCC.

Based on the pro-survival role of autophagy, we demonstrated that the autophagy inhibitor, spautin, acted synergistically with fingolimod to promote cell death. The combination treatment was more effective in the resistant strain than the parental counterparts. Therefore, this work reveals that combining spautin with fingolimod holds great promise in overcoming MDR in HCC.



Supervisors:

- Dr. Hany Omar • Prof. Taleb AlTel

Examiners:

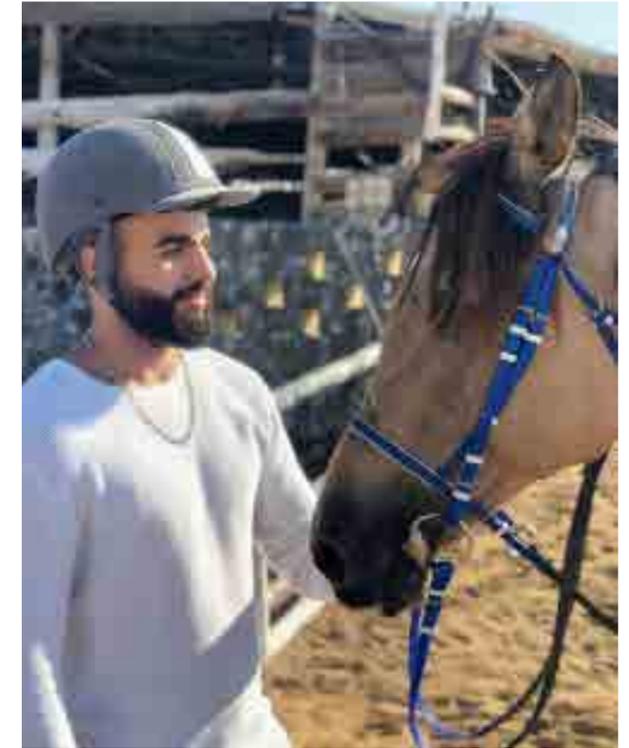
- Prof. Karim El-Zubi • Dr. Maha Mohamed Saber • Dr. Rania Harati

Champion Mindset

My Name is **Ahmed Elsheimy** and I am a failure person, Yes I am a Failure. Don't feel Surprised that you are reading some words written by a person and that same person is calling himself a failure. But tell me , What do you know about Failure? , How Do you see Failure? , And what do you feel when you fail in something?, Do you stop once you Fail? , Do you feel disappointment?, Do you let the giving up feeling controls you?.

If the answers of the last three questions was yes, this is unfortunately the case that happen for the majority of people. Think about it again do you want to be like the majority of people or do you want to join the 1% Club.

No one likes to Fail but the choice is between your hands, Do you like to stop and give up once you fail or do you use failure as a fuel, a fuel to grow you , a fuel to develop you . Here comes the difference between the normal people and the champions. Champions don't like to Fail but they see failure as a source of motivation as a power they take this failure as a something that strengthen them. Champions understand the process of failure and then see what is required to be a lead, to be great, to be the best. Then they become highly passionate and highly obsessed to be successful.



His Highness Sheikh Mohammed bin Rashid Al Maktoum UAE Vice President, Prime Minister and Ruler of Dubai said, "Opportunities are made, they do not just lie around waiting for someone to grab them". This is what the real champions do , real champions are always hungry for the opportunities , real champions dies for the opportunities they made their own opportunities, No matter how huge is the price of the risk that they will pay for this opportunity Because champions are 100% aware that if they don't take any risks they will achieve nothing in their life.

All of us can be like these champions, because they are normal people just like us the difference between the normal people and the champions is the way of thinking and the mindset. The Mindset of a champion always want to be in the best version and always want to develop and improve. Warren Buffet is one of the most successful

business icon in the world and he is an American investor, He was asked one day what is the best thing to invest in. Warren Buffet replied "The Best Investment is to invest in yourself " . Take it as a general rule there is no champion that didn't fail one day, Thomas Adison created the light bulb after 1,000 unsuccessful step. Micheal Jordan the best Basketball player of all time was kicked from his high school Basket Ball team. And believe me no one became in that success without failing one day that's why I'm telling you my name is **Ahmed Elsheimy** and I am a Failure, And I am proud to be a failure because Failure is the road or the gate to success and there is no success comes after zero failing.

Thank you for reading this remember you are the sailor of your own ship and the captain of your soul no matter how hard the waves is this will make you a great Sailor. Life is still going start your own journey and make everything matters.

Students Graduation Ceremony



Graduation 2021

By Haidy Osama

First and foremost, I would like to congratulate all of my friends and colleagues class of 2021 for finally completing the most challenging 5-year journey in our lives so far. WE DID IT!! We have endured so much in the past 5 years, resting was not in our dictionary from quizzes to assignments to midterms and finals, it was like a rollercoaster testing our strength and how long we can hold on before we give up. However, us being here today proves that none of us gave up and we pushed our limits and thrived to finally achieve our goal and graduated as pharmacists.



Throughout our years in the university, we did not only learn educational material, but we also learned more about real life from all our doctors than we would have expected. Our doctors did not only teach us what we were required to know, they would go out of their ways and teach us life lessons and give us advice on how to go about our life after we finish this stage. Our doctors were keen on ensuring that we understood what lies beyond our university walls and that we were graduating with a mindset that would help us tackle what life will present to us later.

We are all deeply grateful for each and every one of them as they never stopped guiding us in the correct path the moment we asked for help. Thank you for all your efforts teaching us both academically and in real life matters, thank you for guiding us and thank you for making us feel like we have a second family here that cares for all of us.

Moreover, we have a very special thanks to all of our families, our mother and fathers who without them we would never be where we are today. They stopped at nothing throughout these years to make sure we became the best version of ourselves that we could have possibly been. Thank you for helping us move forward and encouraging us every time we had a setback, and we were close to giving up, thank you for hearing us every time we would complain about our exams and the stress we have and thank you for being our rock when we needed you the most.

To my friends and colleagues, thank you for standing next to each other and helping one another whenever you could. We would not have made it without each other's support and without our outstanding sense of humor that we kept using every day to reduce the stress and load we felt from everything around us. We always helped each other see the bright side in every obstacle we faced and that's what got us so far.

With that being said, I would also like to tell each one of you that even though we will all go our separate ways from here, we will still have each other every step of the way. We will face hardships and we will struggle to set the correct path for us and to find our purpose in life but trust me if each one of you sets a goal in their head, they WILL achieve it because nothing is impossible and when there is a will there is ALWAYS a way.

Good luck class of 2021, wishing you all the best and may we all have a successful life ahead. Till we meet again.

New Insights into the Therapeutic Applications of CRISPR/Cas9 Genome Editing in Breast Cancer

Munazza Ahmed, Grace Hope Daoud, Asmaa Mohamed
Supervised by: Dr. Rania Harati.



Abstract

Breast cancer is one of the most prevalent forms of cancer globally and is among the leading causes of death in women. Its heterogenic nature is a result of the involvement of numerous aberrant genes that contribute to the multi-step pathway of tumorigenesis. Despite the fact that several diseasecausing mutations have been identified, therapy is often aimed at alleviating symptoms rather than rectifying the mutation in the DNA sequence. The Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)/Cas9 is a groundbreaking tool that is being utilized for the identification and validation of genomic targets bearing tumorigenic potential. CRISPR/Cas9 supersedes its gene-editing predecessors through its unparalleled simplicity, efficiency and affordability. In this review, we provide an overview of the CRISPR/Cas9 mechanism and discuss genes that were edited using this system for the treatment of breast cancer. In addition, we shed light on the delivery methods— both viral and non-viral—that may be used to deliver the system and the barriers associated with each. Overall, the present review provides new insights into the potential therapeutic applications of CRISPR/Cas9 for the advancement of breast cancer treatment.

Conclusion

The CRISPR/Cas9 system has undoubtedly made its mark in the field of science through its efficiency and versatility in gene editing compared to its earlier predecessors. This Nobel Prize winning platform has displayed immense clinical potential through its use not only in the detection but also in the screening of therapeutic targets for genetic diseases which are notoriously difficult to treat due to the lack of definitive therapies.

New Insights into the Therapeutic Applications of CRISPR/Cas9 Genome Editing in Breast Cancer
Munazza Ahmed, Grace Hope Daoud, Asmaa Mohamed
Under Supervision of
Dr. Rania HARATI, Ph.D.

Created with Biorender

Highlights

- Breast cancer is a heterogenic disease due to the involvement of numerous aberrant genes that contribute to the multi-step pathway of tumorigenesis.
- The Clustered Regularly interspaced Short Palindromic Repeats (CRISPR)/ Cas9 is a ground-breaking tool that is being utilized by many researchers for the identification and validation of genomic targets bearing tumorigenic potential.
- Research articles employing the use of CRISPR/Cas9 to edit genes contributing to breast cancer were reviewed.
- The results were summarized and highlighted the significance of the need for further studies to elucidate the role of mutated genes.
- Delivery methods of this system along with its limitations were also discussed.

A prime example of this is the employment of CRISPR/Cas9 in studies involving breast cancer, where causal relationships have been established with specific genetic mutations. In most cases, manipulation of genes using CRISPR/Cas9 has led to significant suppression in various stages of tumorigenesis including initiation, progression, proliferation and metastasis. However, despite all the traction it has gained, limitations with regards to its ethics, off-target effects, mutagenesis and delivery necessitate further studies to rectify these issues. For the conventional use of this system in the near future, both precise knowledge of pathogenic variants, as well as optimization of the system itself, is essential to venture into the new era of personalized medicine.

Polymeric Nanoparticles for the Targeted Management of Colorectal Cancer

Haidy Osama Ibrahim, Khalid Zaki Mohamed Zaki, Mariam Rafat El Hamshary
Supervised by: Dr. Mohamed Aly Haider-Associate,
Professor of Pharmaceutics and Pharmaceutical Technology



Abstract

Colorectal cancer is the third most diagnosed cancer worldwide and the second common cancer in the UAE. The current methods of treatment used have resulted in successful treatment of the cancer by reducing tumor growth, metastasis, and morbidity rates but there are drawbacks that do not make them ideal for the treatment such as unwanted adverse effects, poor water solubility and low cellular uptake.

The use of nanotechnology in formulation of carriers for drug delivery in CRC as well as early diagnosis has been focused on by many studies as their properties allow the reduction in side effects, enhancement of therapeutic benefits and site targeting.

In this review, we will be discussing the use of different classes of polymeric NPs including polymeric micelles, polymersomes, polymeric nanogels, polymeric nanocapsules and dendrimers as carriers in the management of CRC.

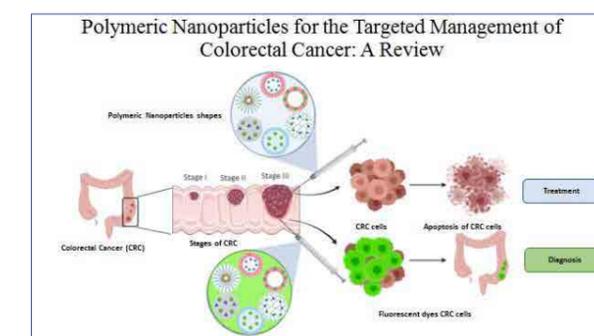
Overall, polymeric NPs showed improvement in drug delivery challenges with conventional therapy such as higher bioavailability, enhanced cellular uptake, higher cytotoxicity, longer circulation time, better tumor growth inhibition; some NPs provided modified drug release such as delayed or sustained release as well as targeted drug release.

Conclusion

The different polymeric NPs are shown to be one of the most promising tools in the treatment of CRC reducing many of the challenges faced with traditional cytotoxic drug delivery.

We briefly summarized the role of NPs in the treatment of cancers and showed how the different NP classes improved bioavailability, enhanced cellular uptake due to their small size, longer circulation time due to the use of PEG polymer in some NPs and better tumor growth inhibition.

Certain NPs provided modified drug release whether delayed or sustained release that could result in reduction in the frequency of drug administration so better patient compliance as well as targeted drug release that would reduce the side effects of the medications as there is minimum effect on normal healthy cells.



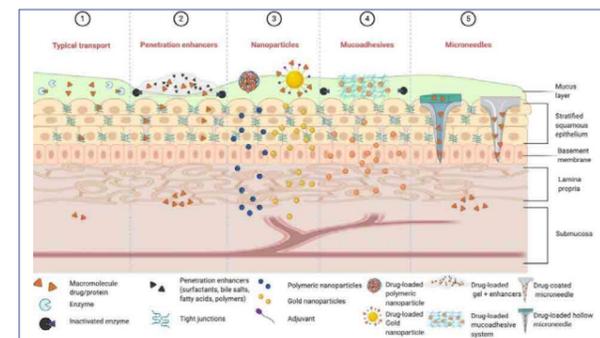
Advances in The Delivery of Macromolecules & Biologics Across the Oral Mucosa

Asmaa Hatem Melhem, Hiba Osama Abdel Fattah Abulebdeh, Noor Mohammad Bashir Alkalla
Supervised by Dr. Mark Rawas Qalaji

Abstract:

The recent advancement in the field of genetic engineering and biotechnology has opened the door for the development of numerous biologics and macromolecule drugs like proteins, peptides, polysaccharides, and nucleic acids. These drugs serve a great therapeutic role and provide precise pharmacological actions, making them highly potent and tolerable. However, it is challenging to deliver them via traditional routes like the oral or parenteral, which raised the need for alternative sites for their delivery. Among the possible alternative routes, the sublingual and buccal mucosa has shown the greatest potential, as they were found to be the most convenient and easily accessible sites for both local and systemic delivery, in addition to being non-invasive and free of harsh environments.

Despite these attractive advantages, physiological and drug-related barriers complicate the pre-oral delivery and necessitate its optimization. Hence the interest in developing novel formulations and strategies has increased dramatically over the past years. This study aims to summarize the recent strategies developed to improve the delivery of macromolecules across the buccal and sublingual routes.



Conclusion:

Pre-oral drug delivery systems are a promising systemic as well as local delivery of macromolecules. The biggest drawback of the oral cavity is the low penetration of macromolecules through the epithelium. This explains why researchers focus their attention on researching different types of delivery systems of macromolecules through the pre-oral route.

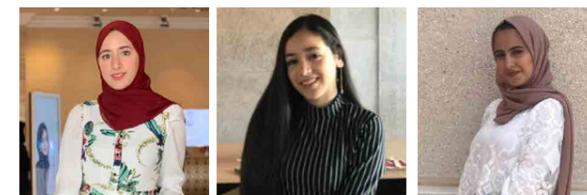
This review extensively explained some of the advanced physical and chemical approaches for enhancing macromolecule drug delivery through the oral cavity. Many patents have been recorded to include these inventions, which indicates the possibility of advancing drug delivery systems to administer the complex macromolecule to have an improved therapeutic response across the oral cavity mucosa.

However, not all the available applications and results can be extrapolated to humans due to the differences in the anatomy of the preoral route, except for the buccal tissue of pigs and rabbits.

Moreover, very few macromolecule drugs reached clinical trials due to extensive evaluation of pharmacokinetics, stability, efficacy, and safety requests required for their approval.

HER4 (ErbB4) & Its Inhibitors

Nada Hesham Mewafi, Nada Emad Ismail, Minnatullah Ahmed Emar
Supervised by: Dr. Mohammed El-Gamal



Abstract

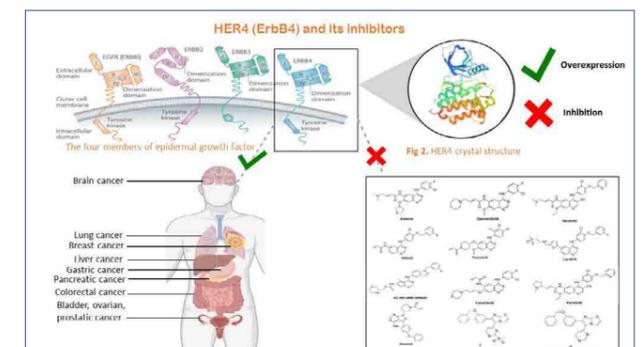
HER4 is a receptor tyrosine kinase that is required for the evolution of normal body systems such as cardiovascular, nervous, and endocrine systems, especially the mammary glands. It is activated through ligand binding and activates MAPKs and PI3K/AKT pathways.

HER4 is commonly expressed in many human tissues, both adult and fetal. It is important to understand the role of HER4 in the treatment of many disorders. Many studies were also conducted on the role of HER4 in tumors and its tumor suppressor function.

Mostly, overexpression of HER4 kinase results in cancer development. In the present article, we reviewed the structure, location, ligands, physiological functions of HER4, and its relationship to different cancer types. HER4 inhibitors reported mainly from 2016 to present were reviewed as well.

Conclusion

With the ever-growing need for new treatments for the management of cancer, new therapeutic targets have increasingly become an absolute necessity for enhancing the patient's quality of life. The overexpression of protein kinases and their role in tumorigenesis have been widely studied in several types of cancer.



Tyrosine kinase inhibitors have shown a significant improvement in oncological management in patient therapy as a novel relatively selective anticancer class of medications. With the discovery of new tyrosine kinases such as HER4 protein, new therapeutic modalities have been synthesized. Understanding the molecular pathogenesis and the structure and role of HER4 ligands in mitigating the progression of tumor cell growth has led its use as a potential target in tumor management.

Identifying the important pharmacophores and the structure-activity relationship between the natural ligands and the receptors has preceded the development of HER4 inhibitors as therapeutic entities. There are controversial reports about the contribution of HER4 kinase to cancer. Further studies are needed to be accomplished supported by selective HER4 inhibitors.

Most of the previously reported HER4 inhibitors are non-selective. The recent discovery of selective HER4 inhibitors such as the imidazothiazole-based compounds I and II can be a great addition in this field.

The challenges and needs of Pharmacy Clients with Multimorbidity: Cross-Sectional Study

Leen Bassam Almatni, Jood Aiman Hamdoun, Ahmed Ezzat Elsheimy
Supervised by: Hamzah Tareq Al Zubaidi



Abstract

Background: Multimorbidity has become increasingly common globally. People with multimorbidity often experience many challenges that negatively affect their quality of life. Community pharmacists can play an important role to help them achieve optimal drug therapy outcomes and improve their quality of life. The aim of this study was to explore the challenges of people with multimorbidity and their needs for support from community pharmacists in the UAE.

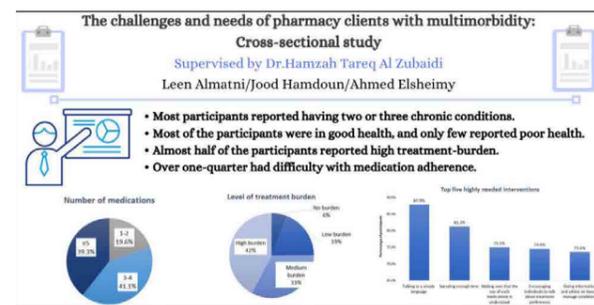
Methods: This was a cross-sectional study among pharmacy clients with multimorbidity. A questionnaire was developed in Arabic and English. UAE citizens and residents with two or more chronic conditions were approached. Several validated tools were used to assess quality of life, treatment burden, and self-efficacy. Needs for pharmacist intervention relevant to people with multimorbidity were also assessed. The survey was distributed in twelve community pharmacies located in two cities in UAE (Sharjah and Dubai). Data were collected using SurveyMonkey and a descriptive analysis was undertaken.

Results: In total, 224 participants completed the survey. The most common chronic conditions reported by study participants were hypertension (56.7%) and high cholesterol (54.5%), followed by diabetes (49.6%). Most participants reported having two or three chronic conditions (70.1%), taking three to four medications, and taking between three and seven tablets/capsules per day. Most of the participants were in good health, and only few reported poor health. High treatment burden was reported by 42% of participants. Over one-quarter had difficulty with medication adherence. The highly

needed interventions by participants from community pharmacist were: pharmacists talking to them in simple clear language, spending enough time with them, making sure that they understood how to use the medications, encouraging them to take about treatment preference, and giving information and advice on how to manage their conditions.

Conclusion:

Pharmacy clients with multimorbidity in the UAE reported facing a number of challenges, including a high treatment burden, low self-efficacy, and polypharmacy. They also reported needing many interventions from community pharmacists to help them in managing their conditions. These challenges and the complexity of the treatment regimen all lead to adherence problems, side effects, and unfavorable treatment outcomes.



A competent community pharmacist who is aware of the needs of people with multimorbidity would be able to provide a range of clinical and non-clinical support to better manage health conditions, improve quality of life, and possibly improve treatment outcomes. Based on the findings of this study, community pharmacists in the UAE can assist reduce challenges of people with multimorbidity by simple interventions such as using simple and clear language during counseling, spending enough time with their pharmacy clients, ensuring that they understand how to use medications, encouraging them to discuss their treatment preferences, and providing information on how to manage their conditions.

Multiple sclerosis

Kenaz Al Jalam, Dana Darwish, Suad Awadallah
Supervised by: Prof. Ayman Noreddin



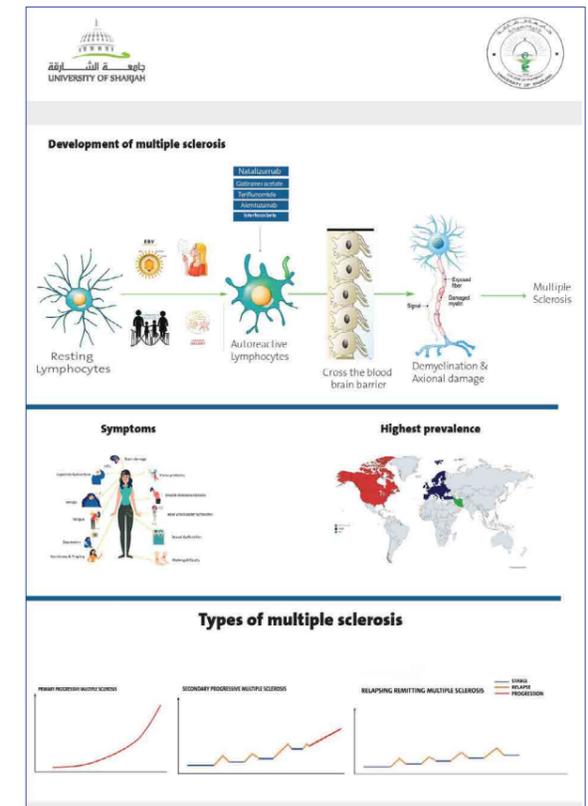
Abstract

Multiple sclerosis is a chronic immune mediated demyelinating disorder, it can disable any part of the central nervous system which can lead to axonal damage, that results in poorer quality of life.

This article started with a case study for a multiple sclerosis patient with her clinical journey. Also, it highlighted the main three subtypes of multiple sclerosis, however, the major underlying etiology of multiple sclerosis is still unclear. According to that, our hypothesis supported the potential relationship between Epstein-Barr virus and multiple sclerosis, which permit us to figure out that the risk of multiple sclerosis in patients who had positive exposure to Epstein-Barr virus is higher and vice versa.

This summarized that Epstein-Barr virus is the most common causative agent and had the major leading association with multiple sclerosis etiology combined with other identified environmental risk factors that may trigger the disease resulting in abnormal immune response, there is an inverse relationship between anti Epstein-Barr virus antibody with the lesions size, this finding was confirmed by a cohort study that examined 1000 multiple sclerosis patients.

Moreover, we represented the current ongoing management which suite diverse multiple sclerosis cases, based to the hypothesis we are keen and optimistic that hopefully the future treatment strategies will focus more on this contributive factor developing a tested effective vaccination.



Conclusion

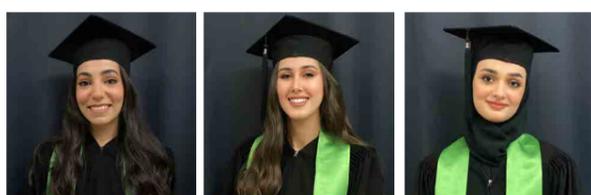
As addressed in this review article, multiple sclerosis is a chronic autoimmune disease which has three phases and it is idiopathic till now, hence, it is not curable. Treatments stated in this article are only to slow down the progression of the disease, improve the quality of life and to relieve the symptoms.

Our article discussed some factors that may trigger the disease development and focused on Epstein-Barr virus, which is found in most multiple sclerosis patients and it increases the chance of getting the disease as well as it's severity. Teriflunomide is considered as a curbing agent for the reproduction of this virus but unfortunately, we still do not have an Epstein-Barr virus vaccination. Multiple sclerosis is a common disease but there is a lack of awareness among the society.

We conducted a survey regarding this matter and we hope to educate people more about such disease by our review article.

Metabolomics of Breast Cancer Cells, a comprehensive review

Nadine Ahmed Yassin, Rula Osamah Al-Mohammed, Sally Sarchanar Jamal
Supervised by: Dr. Mohammad Harb Semreen | Co-supervised by: Dr. Hamadeh Tarazi



Abstract

Breast Cancer (BC) is a heterogeneous disease and among the most serious types of cancers in women worldwide. In our thesis we have taken a closer look at the science of metabolomics through reviewing articles from the past decade (2010-2020).

Through the discovery of novel biomarkers these advanced bioanalytical approaches will now open up new avenues for the diagnosis of BC in addition to potential prognostic biomarkers with significant clinical applications.

Conclusion:

Metabolomics has a potential role in achieving a comprehensive understanding of BC's pathogenesis and molecular subtypes, even among different ethnic groups. With the help of identified biomarkers we can use metabolomics as a diagnostic and prognostic tool.

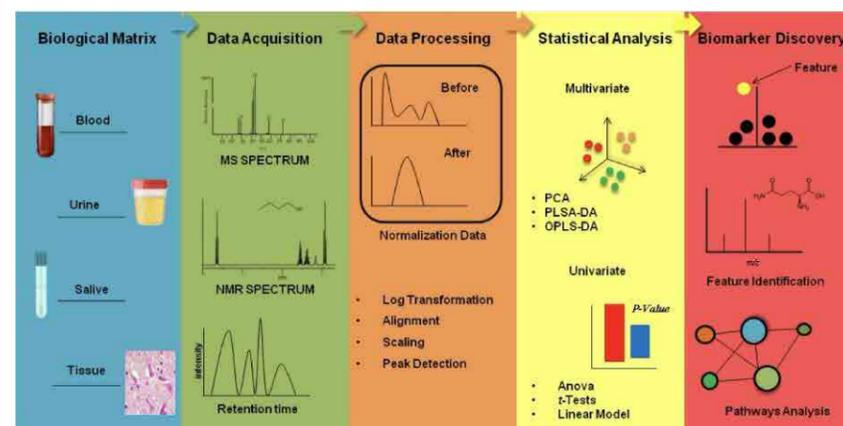
Due to its non-invasive nature, it can help increase patient compliance and participation for the prediction of treatment response in a painless manner. In order to achieve these goals, several analytical techniques have helped gather qualitative and quantitative knowledge about the molecular phenomena of BC cells, depending on the type of analytical technique used.

The most common techniques are LC-MS, GS-MS, and NMR. Depending on the advantages and disadvantages of each analytical technique we can determine the most appropriate method to analyze the metabolite.

In addition, the type of analytical technique to be used will depend on the characteristic feature of the metabolites in need of separation and identification. Data analysis is then required to be able to understand the large amount of data generated from the analytical techniques.

Different metabolomic features are used as input for data analysis, such as: spectral peak areas, metabolite concentration, and spectral bin areas.

Univariate and multivariate analytical techniques are then used to gather significant information that can help provide an all-inclusive biological understanding on the studied problem. The advancement of metabolomics will allow this whole range of sciences to flourish and will be the major boost to human health. Scientists should be encouraged to continue improving their metabolomics research with credible sciences and communication strategies.



Medication Self-Management Application (DAWAIE)

Suzan Murad, Omar Ashraf, Mohammad Hammad
Supervised by: Feras Jassim Jirjees



Abstract

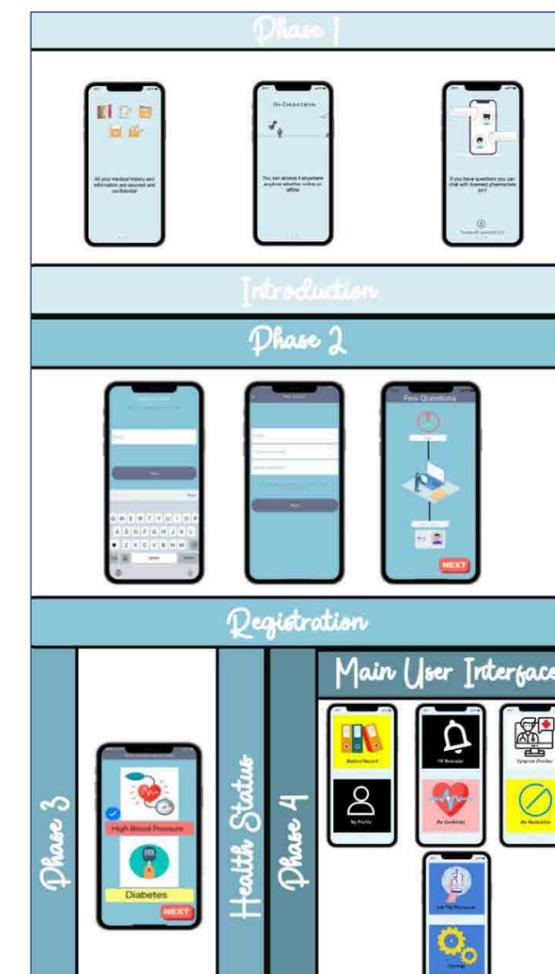
The medication self-management application (DAWAIE) helps to bring multiple benefits to the patients such as assisting them in engaging with pharmacists, managing their own medication intake, improving drug adherence, and assisting patients in learning about their medications as well as their condition and answering therapy-related questions.

Furthermore, the application is simple to use and is distinguished by its user-friendliness. The application will be able to perform various new functions in the future updates aimed at increasing user adherence.

This graduation project consists of three chapters that will go into every aspect of the project, from analysis to the development and evaluation of the program. The study team looked on the utilization of mobile health applications in pharmacy practice, as well as their involvement in chronic disease treatment and polypharmacy management.

The research team also highlighted the methodology they utilized to conduct the literature review, as well as the study's significant results. The research team discussed every part of the prototype, from its name to the reasons for selecting it, as well as the application's possible features.

Displays numbers from the application from the footage that was shown to the participants at the focus group. It also delves into the finer points of each feature included in the prototype.



Conclusion

The application aims to combine everything the patient needs regarding their conditions and medications in the palm of their hands. It will be used to help patients with chronic diseases taking polypharmacy improve their medication intake by medication self-management. The application aims to reduce any drug-drug interactions, and adverse effects that might arise due to lack of data.

Impact of Mobile Phone Application on Medication Adherence in Arabic Patients with Chronic Diseases

Dana Bitar, Sana abo aljoud, Nihal Siddig
Supervised by: Feras Jassim Jirjees



Abstract

Chronic diseases are broadly spread conditions affecting individuals from different ages and backgrounds that may cause disabilities and death, therefore medication adherence is crucial in managing these conditions to prevent them from getting worse. Since adherence is considered a challenge for chronic disease patients, application reminders can be used as an aid to enhance adherence level.

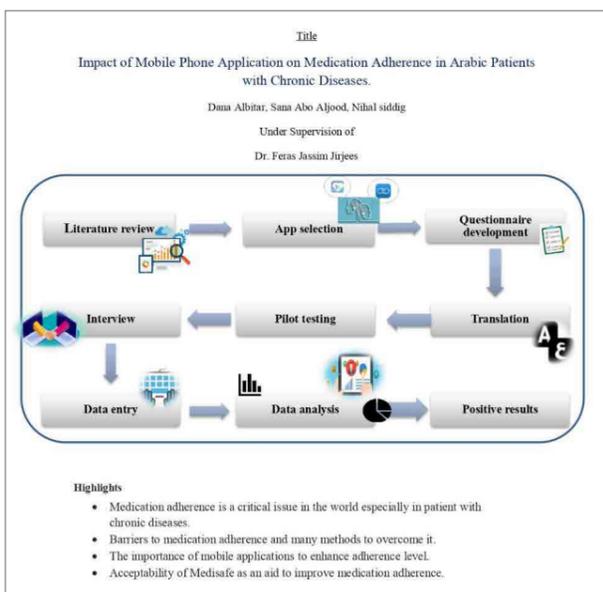
Objective: The aim of this study was to explore the effectiveness of Medisafe application in improving the adherence level in chronic disease patients.

Methodology: This was a pilot study conducted over one month utilizing Medisafe application. The recruitment process was through online methods due to COVID-19 pandemic spread. Twenty-one participants were included in the study. Eligible participants filled a consent form, then they were interviewed to collect the demographic data. The assessment of adherence and satisfaction was through the use of Morisky Medication Adherence Scale MMAS-8 and application feedback survey respectively.

Result: Our result clearly shows that 61.9% of the participants were female, 66% of participants were between the age of 40 and 60 years, 86% of participants married, 90% of participants were non-smoker, 52.8% of participant's had bachelor's degree, 57.1% of participants had a health insurance and 71.4% of participants had not used any reminder tool. And regarding the level of adherence there were significant improvement in adherence as prior the use of Medisafe app 87% of participants had low adherence, and 14% of participants

had medium adherence and following the use of Medisafe app 33% of participants had low adherence, 62% of participants had medium adherence level and 5% of participants had high adherence.

Conclusion: The study showed that Medisafe app had a positive impact on medication adherence level as there was increase in the medication adherence level. In addition to that the majority of the participants were highly satisfied with application use.



Conclusion

We can conclude from the study that there is a significant improvement in level of adherence following the use of Medisafe app and the participants were highly satisfied. We recommend the use of this application for patients who suffer from difficulties remembering and scheduling their medication. For scaling up studies we need to take into consideration the sample size and the duration of the trail, so the result will be more reliable.

Recent Perspectives of Camptothecin and its analogues as anticancer agents

Noor Maarouf, Noura Khaiwa, Mhmd. Homam Darwich
Supervised by: Prof. Taleb H. Al-Tel



Abstract

Nature represents a rich source of compounds used for the treatment of many diseases. Camptothecin (CPT), isolated from the bark of *Camptotheca acuminata*, is a cytotoxic alkaloid that attenuates cancer cell replication by inhibiting DNA topoisomerase 1. Despite its promising and wide spectrum antiproliferative activity, its use is limited due to low solubility, instability, acquired tumour cell resistance, and remarkable toxicity. This has led to the development of numerous CPT analogues with improved pharmacodynamic and pharmacokinetic profiles.

Three natural product-inspired drugs, namely, topotecan, irinotecan, and belotecan, are clinically approved and prescribed drugs for the treatment of several types of cancer, whereas other derivatives are in clinical trials. In this review, which covers literature from 2015-2020, we aim to provide a comprehensive overview and describe efforts that led to the development of a variety of CPT analogues.

These efforts have led to the discovery of potent, first-in-class chemotherapeutic agents inspired by CPT. In addition, the mechanism of action, SAR studies, and recent advances of novel CPT drug delivery systems are discussed.

Conclusion

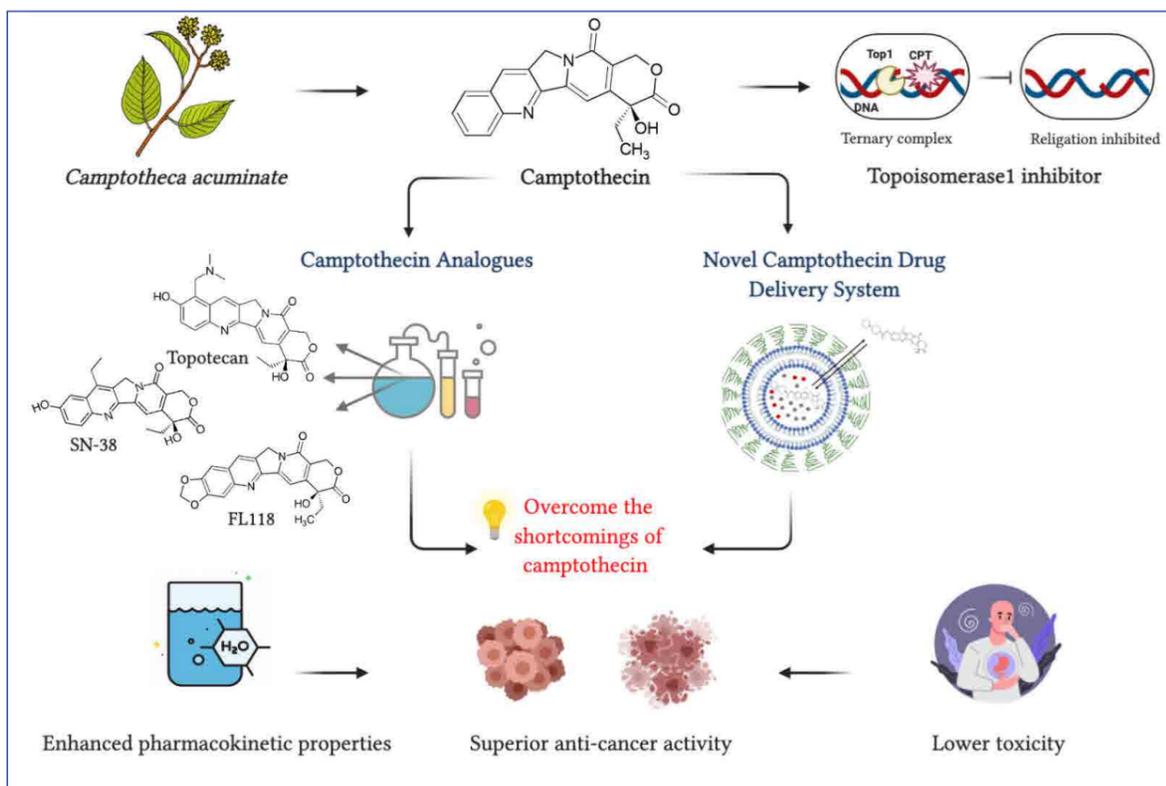
Despite the remarkable advances in cancer treatment, chemotherapy remains the most common and first-line treatment for metastatic tumours. However, the associated toxicity, target non-selectivity, and acquired resistance are major challenges that hinder the maximum effectiveness and clinical benefit of anticancer drugs [60].

The discovery of the anticancer activity of CPT is considered a therapeutic breakthrough. Research on CPT has led to the derivative, irinotecan, a CPT that was included in the 2019 WHO Model List for Essential Medicines due to its importance as an anticancer treatment.

Due to the many shortcomings associated with CPT-based chemotherapy, even with clinically marketed analogues like irinotecan and topotecan, remarkable efforts were devoted to understand the interaction of CPT with its molecular target, Top1-DNA complex, and to produce compounds that exhibit superior activity with lower toxicity.

Most of the CPT analogues reviewed in this article displayed greater potency compared to the parent CPT and are active against different cancers and many of them were active against multidrug resistant tumours. CPT's derivatives were synthesized and developed with most important derivatives that are related to the modifications in the A, B, and E rings.

Out of the many reviewed CPT derivatives, we were able to conclude that compound F10 appear as the most promising lead with an IC50 of 0.003 μ M against human colon cancer HCT116 cell line. It also displayed a significant aqueous solubility and lower toxicity.



This is mainly due to the presence of a C-7 substitution which is known to significantly improve activity by extending into a hydrophobic pocket, in addition to the amide group at C-10 that aided in improving CPT's low solubility. However, it is important to note that most of these derivatives were tested in vitro, and therefore we would encourage to incorporate more in vivo testing to provide more meaningful and reliable results taking into consideration all biological factors.

To this end, CPT derivatives remain intriguing to many researchers, and this will continue to prompt the emergence of new CPT analogues as promising chemotherapeutic agents. In addition, the CPT-DNA-Top1 "ternary complex" is continuously attracting attention and suggesting new directions in the development of CPT-based chemotherapy.

Furthermore, the field of drug delivery systems appears to have a great impact for the advancement of CPT-associated chemotherapeutics. Additionally, the application of machine learning can aid in both the clinical use as well as SAR analysis of CPTs. The

use of Artificial intelligence can help predict irinotecan toxicity [61] as well as drug combinations [62] which can lead to optimized treatment with fewer side effects. Furthermore, in a Bayesian machine-learning approach, camptothecin analogues clustered together with tubulin polymerization inhibitors [63].

While this finding has been previously reported [64, 65], it remains widely overlooked in the field of cancer research. More attention is needed to further investigate the potential dual role of CPTs as a topoisomerase I and tubulin polymerization inhibitors since if confirmed can open new and exciting avenues for more potent anticancer leads.

With over 50 years of research, CPT and its derivatives continue to show promise for the development of better anticancer therapies. As our knowledge in chemical synthesis schemes and delivery systems continues to advance, this humble molecule holds great pharmaceutical potential for developing compounds with even greater efficacy against cancer cells.

Shedding the Light on Pharmacists' Roles during COVID-19 Global Pandemic

Eiman A. Madawi, Maryam Y. Al Deri., Youstra A. Ibrahim,
Supervised by: Dr. Osama H. Ibrahim | Co-supervisor: Dr. Rana M. Ibrahim



Abstract

Introduction: With the spread of coronavirus disease 2019 (COVID -19), pharmacists as a very important part of healthcare professionals' team are responsible for fighting against the disease regardless of their setting of practice .

Objectives: The purpose of this review is to highlight community and hospital pharmacists' roles during this pandemic, and to clearly illustrate how they are contributing to maintain pharmacy services continuity and supporting other healthcare professionals.

Summary: Clinical pharmacists provide direct patient care through monitoring adverse drug reactions, ensuring individualized treatment, performing evidence-based practice, and evaluating drugs in clinical trials. On the other hand, community pharmacists which are the most accessible healthcare providers by the community increase their awareness regarding the preventive measures, balance medicines supply and demand, provide drive-thru and home delivery services, offer telehealth counselling, psychological support, refer suspected COVID-19 patients, and provide vaccination when available.

Conclusion: Innovative pharmacists' roles have emerged to adapt to changes during COVID-19 pandemic, however, they may be needed in the post COVID-19 world as well.
Keywords: COVID-19; clinical pharmacist; hospital pharmacist; community pharmacist; pharmacist role.

Highlights

- During COVID-19 pandemic, pharmacists are at the frontline fighting against the disease, ensuring pharmacy services continuity, and alleviating pressure on other healthcare systems.
- Pharmacists' role has expanded and is supported by healthcare policymakers in many countries.
- Their roles can be divided into three main categories: "disease management and infection control", "balancing drug supply and demand", "patient care and support for other healthcare providers".
- Clinical pharmacists provide direct patient care through monitoring adverse drug reactions, ensuring individualized treatment, performing evidence-based practice, and evaluating drugs in clinical trials.
- Community pharmacists increase people's awareness regarding the preventive measures, balance medicines supply and demand, provide drive-thru, home delivery services, offer telehealth counselling, psychological support, refer suspected COVID-19 patients, and provide vaccination when available.

Conclusion

Along with pharmacists' conventional roles which have been more remarkable with the current circumstances, many of the novel roles have emerged and spread to adapt to changes during this pandemic in order to ensure continuity of healthcare services and to alleviate pressure on other healthcare systems. However, it will be better to continue performing some of the new roles even after the pandemic of COVID-19 is resolved.

Students Projects



Medication Self Management Application Introduction



The burden of multiple chronic diseases is rapidly increasing. Globally, approximately one in three of adults above 40 years suffer from multiple chronic conditions. The importance of supporting self-management for people with multiple chronic conditions is increasingly recognized as a key component for improving the overall health of this population. With new communication and information technologies, there is an opportunity to target patient-centered healthcare via enhancing control of diseases and self-manage of treatment.

The WHO reported that on average 50% of patients did not take their medications correctly



Our Aim

We aim to develop an integrated mobile system that helps in enhancing the role of patients in medication self-management. Through developing this enriched system.



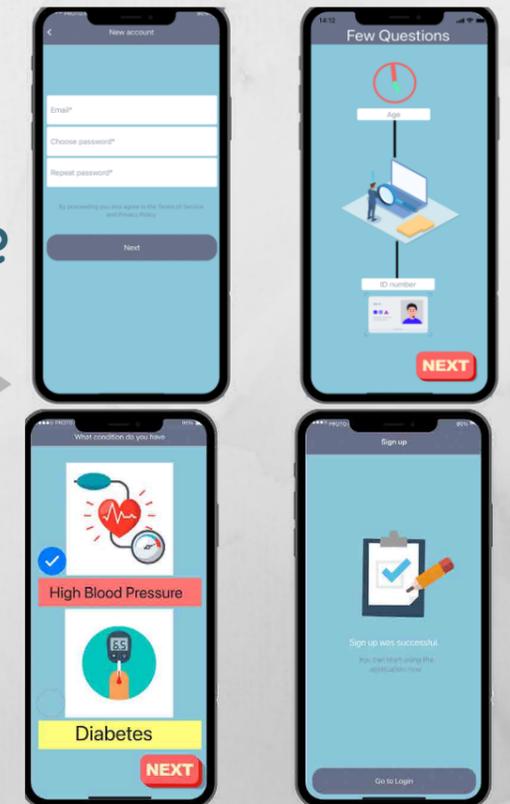
Research Methodology

We have a plan to conduct three studies related to validity of the application
 First would be a qualitative assessment of feasibility
 Second is usability of the system
 Third is a healthcare quality improvement intervention of effectiveness of the system.

Features

1. Bilingual application (English and Arabic)
2. Communication between patients (or carer of patient) and healthcare.
3. Communication between patients and family members related to health issues.
4. Educate patient with trusted source of information (website).
5. Modify health plan.
6. Medical history of patient.
7. Medication reminder.

Prototype



Done by:
 Suzan Murad U16103104
 Omar Ashraf U161030107
 Mohammed Hammadeh U16100012

PHARMACY



Happy Pharmacist Day 2020



جامعة الشارقة
UNIVERSITY OF SHARJAH

A day in the life of a pharmacist:

- Medication management
- Distribution and dispensing of medicine
- Ordering and interpreting lab tests
- Prescribing for minor ailments and conditions
- Provide access to vaccinations
- Managing chronic diseases
- Discovering and developing drugs
- Supporting public health campaigns



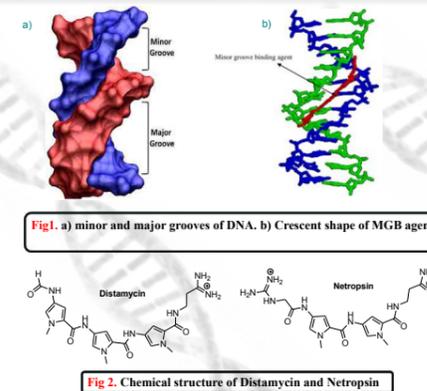
Overview of: Minor Groove Binders (MGBs)



Students: Afnan Ismail Shahin U16103004, Mirna Ali Elmewafy U16106981, Nouran Mohammad Elgammal U15106291
Supervisor: Dr. Hasan Y. Alniss, Department of Medicinal Chemistry, College of Pharmacy, University of Sharjah, halniss@sharjah.ac.ae

Introduction

- DNA has been considered an attractive research topic since the past century.
- DNA is recognized as an excellent therapeutic target for human diseases.
- It has wide potential applications as the anticancer, antibacterial, antifungal, antiviral and anti-parasitic agents target the DNA of the organisms.
- The central dogma is an explanation of the relationship between the DNA and protein. It was introduced by Crick in 1958. figure (3)
- There are 2 grooves of the DNA:
 - Minor Groove:** has narrow and deep morphology (occupies small drug molecules)
 - Major Groove:** has wide and shallow morphology (occupies large drug molecules)
- These DNA grooves act as an excellent targets for drug molecules. Figure (1a)



Chemical classifications

1. Distamycin and Netropsin analogues e.g: Thiazotropsin
2. Hairpin structures developed by Dervan group e.g: ARE-1
3. Hoechst and Hoechst analogues e.g: 54a
4. Duocarmycin analogues e.g: Duocarmycin A
5. Antibody-drug conjugates (ADCs)
6. Aromatic diamidines e.g: Brenil

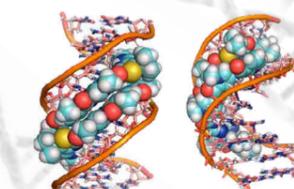
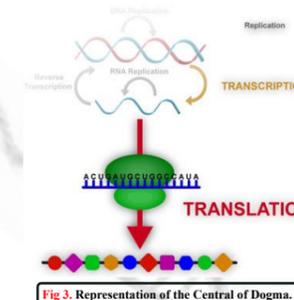
Refer to Figure (5)

MGBs and their discovery

MGBs are small compounds that bind to the minor groove of the DNA.

Main properties of MGBs:

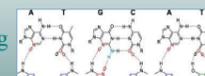
1. Concave-crescent shape. Figure (1b)
 2. Carry aromatic or heteroaromatic rings.
 3. Cationic in nature.
- Natural products like distamycin A and netropsin where the first discovered MGBs. Figure (2)
- Distamycin** is an antibiotic isolated in 1962 from the fermentation of *Streptomyces distallicus*
 - Netropsin** is an antibiotic obtained from culture filtrates of *Streptomyces netropsis*, which was isolated from a soil sample.



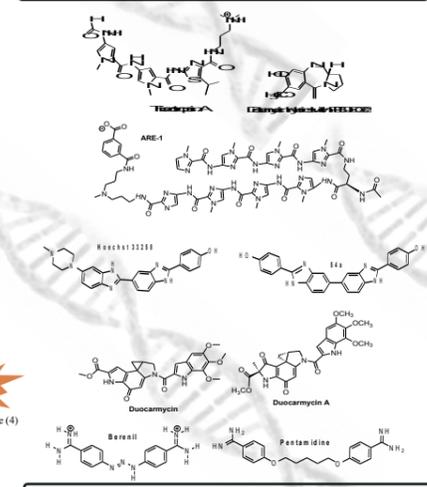
Mode of binding and pairing rules

MGBs interacts with DNA's minor groove through:
a) **Covalent bonding**, or
b) **Non-covalent bonding** (hydrogen bonds, van der Waals and electrostatic interactions)

Pairing rules



Acknowledgments: Foremost, we would like to express our gratitude to Almighty Allah for giving us the power and helping us to complete this work. Then we would like to convey our sincere appreciation to our supervisor Doctor Hasan Alniss for his continuous support, his patience, motivation, and his immense knowledge.



MGBs in clinical trials

MGBs has reached clinical trials such as:

- MGB-BP-3**
- MGB-BP-3 is a novel antibiotic candidate with a powerful antibacterial action against both susceptible and multi-resistant Gram-positive pathogens including, methicillin-resistant and *Clostridium difficile*.
- It was produced by MGB Biopharma in UK which has recently begun a phase-II trial on patients with *C. difficile*-associated diarrhea.

Conclusions

- According to the "Central of Dogma of molecular biology", one gene produces hundreds of proteins.
- Therefore, we need less dose to target the DNA compared with targeting proteins, because proteins are product of genes. So targeting DNA is more effective.
- The most commonly used chemotherapeutics in the market are cytotoxic such as alkylating agents due to the:
 1. Lack of selectivity
 2. Formation of covalent bond, causing irreversible damage to the DNA
- MGBs is considered a promising new class of DNA binding agents because:
 1. They bind selectively with the DNA
 2. They act reversibly via non-covalent interaction

References:
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Abstract

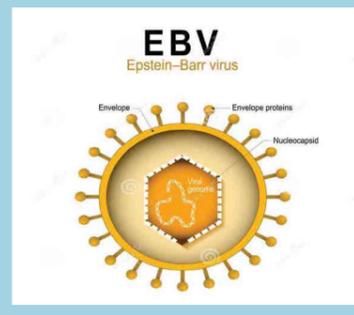
Multiple sclerosis is a chronic immune mediated demyelinating disorder, it can disable any part of the central nervous system which can lead to axonal damage, that results in poorer quality of life. This article highlighted the main three subtypes of multiple sclerosis. However, the major underlying etiology of multiple sclerosis is still unclear. According to that, our hypothesis supported the potential relationship between Epstein-Barr virus and multiple sclerosis, which permit us to figure out that the risk of multiple sclerosis in patients who had positive exposure to Epstein-Barr virus is higher and vice versa. This summarized that Epstein-Barr virus is the most common causative agent and had the major leading association with multiple sclerosis etiology combined with other identified environmental risk factors that may trigger the disease, resulting in abnormal immune response. Moreover, we represented the current ongoing management which suite diverse multiple sclerosis cases, based to the hypothesis we are keen and optimistic that hopefully the future treatment strategies will focus more on this contributive factor developing a tested effective vaccination.

Objective

The primary aim of the study is to spread awareness about multiple sclerosis as it is a common disease. In addition, it is idiopathic, which means that the cause is still not clear, hence, trigger factors for this disease where discussed in this thesis, spotting the light on an important factor that may be interfering in the development of multiple sclerosis, which is Epstein-Barr virus as it increases the susceptibility and the severity of the disease.

Virus

Ability of EBV to attack the immune system: the intrinsic properties of Epstein-Barr virus give it the ability to evade the immune system, it achieves this by exploiting a sequence of transcription programs that drive the normal B-cells to differentiation pathways, thus, driving these infected B-cells to transition from being infected B-cells blasts to latency infected memory cells.

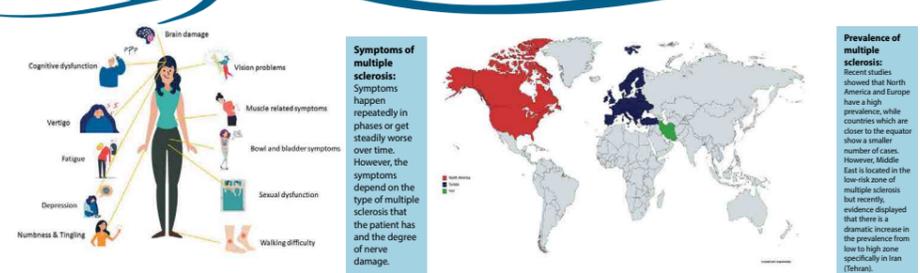
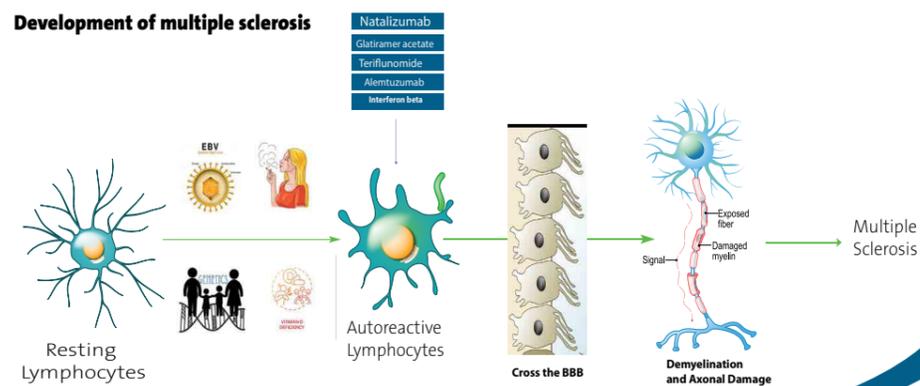


Treatment

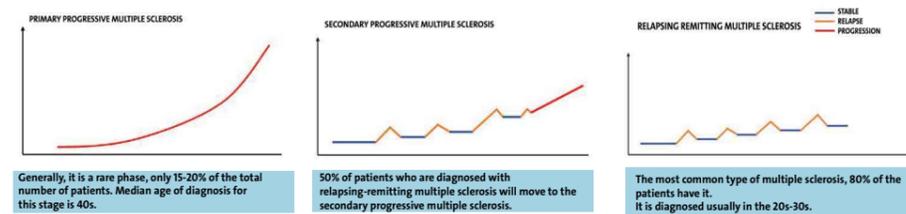
Disease modifying therapies Authorized disease-modifying therapies (DMTs) either modulate or suppress the autoimmune process by different mechanisms which help in decreasing the frequency of the relapsing attacks. Mostly, they have a better effect on relapsing-remitting multiple sclerosis, while they are not significantly effective in the progressive phase of multiple sclerosis in which the disability of neurons gets worse over time.



Development of multiple sclerosis

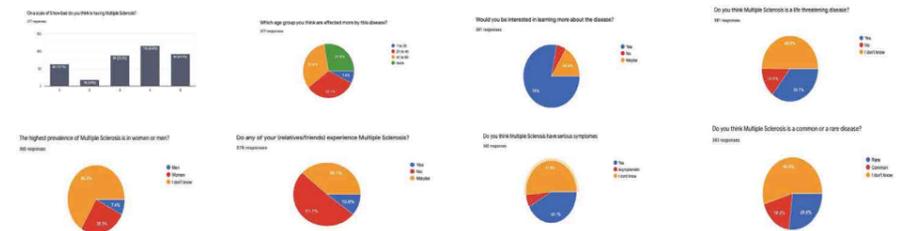


Types of multiple sclerosis



Survey

Data collected in this survey came from 400 people throughout a period of one month, mainly from Abu Dhabi, Sharjah and Dubai. The survey consisted of 10 questions. Participants were asked to tick the answers that applied for them. The survey was written in the English language and was distributed online.



Results

Survey results showed that more than half of the participants do not know enough about multiple sclerosis and a decent proportion have wrong knowledge about it.



Conclusion

Multiple sclerosis is a chronic autoimmune disease which has three phases and it is idiopathic till now, hence, it is not curable. Treatments stated are only to slow down the progression of the disease, improve the quality of life and to relieve the symptoms. Our article discussed some factors that may trigger the disease development and focused on Epstein-Barr virus, which is found in most multiple sclerosis patients and it increases the chance of getting the disease as well as its severity. Teriflunomide is considered as a curbing agent for the reproduction of this virus but unfortunately, we still do not have an Epstein-Barr virus vaccination. Multiple sclerosis is a common disease but there is a lack of awareness among the society. We conducted a survey regarding this matter and we hope to educate people more about such disease by our review article.

1 Definition

The department of the hospital which deals with procurement, storage, compounding, dispensing, manufacturing, testing, packaging, and distribution of drugs.

The first hospital pharmacy was established by Jonathan Roberts in Pennsylvania hospital (Philadelphia) in 1752.

2 Objectives

- Cost containment
- Effective and efficient services
- Patient satisfaction
- Effective staff utilization
- Proper planning, organizing and implementing the policies of the pharmacy
- Continuous counselling of the patients, nurses and all the health care team on the possible side effects, toxicity, adverse drug effects etc.

3 Functions

- ❖ Forecast of demand
- ❖ Selection of reliable suppliers
- ❖ Determining specifications of the required medicament
- ❖ Manufacturing of sterile or non-sterile preparations
- ❖ Maintenance of manufacturing records
- ❖ Quality control of purchased or manufactured products
- ❖ Distribution of medicaments in the wards
- ❖ Dispensing of medicaments to out-patients
- ❖ Drug information source in hospitals
- ❖ Centre for drug utilization studies
- ❖ Implement recommendations of the pharmacy and therapeutic committee
- ❖ Patient counselling
- ❖ Maintaining liaison between medical, nursing and the patient

5 Storage of drugs

1) Storage Of Refrigerated Drug Items:

Refrigerated medications must be stored at appropriate temperatures according to the following:

- Room temperature: Between 15-25°C
- Cool place: Between 8-15°C (Antibiotics, Vitamins etc)
- Refrigerator: Between 2-8°C (Vaccines, insulin etc)
- Freezer: Between -10 and -25 °C (Oral Polio vaccine which is kept below -20°C)

2) General drugs:

- Arranged alphabetically in the cabinet or As per use!
- Bin card showing stock position
- Short expiry to be placed in front and vice versa.
- FIFO (1st in, 1st out) method to be followed.

4 Physical planning



1) Location:

- ❑ In the ground floor with storage in the basement
- ❑ Readily accessible to the elevator
- ❑ Accessible to all areas of the hospital
- ❑ OPD unit to serve all OPD patients

2) Size:

- ❑ 10 sq ft/bed in 100-bedded hospital
- ❑ 6 sq ft/bed in 200-bedded hospital
- ❑ 5 sq ft/bed in 500-bedded hospital or more

3) Lay-out:

- ❑ **Grid:** Traditional form of store where the products are displayed in straight and parallel lines.
- ❑ **Free-flow:** Fixtures are irregularly shaped, such as circles and triangles.
- ❑ **Finishing:**
 - Floor should be smooth, tough and resistant to acid/base like heavy linoleum.
 - Wall should be smooth, washable with light color
 - Light-colored drug cabinet of wood or steel.
 - Sterile room, water-proof, non-skid surface with drainage system.
- ❑ **Light:**
 - Plenty of windows for day light.
 - Florescent light on prescription and distribution area.

4) Prescription area:

- ❑ Desk with all the office equipment, computer and telephone.
- ❑ Drug available list and information board.

5) Preparation area:

- ❑ Worktable for manufacturing of solutions.
- ❑ Sterilization facilities.
- ❑ Acid-proof sinks

6) Storage area:

- ❑ Storage cabinet with proper leveling.
- ❑ Space for loading the packs.
- ❑ Space for pharmacy lab with testing equipments.

3) Narcotic drugs:

- Separate and special arrangement.
- Proper recording to be maintained.
- Kept always under lock and key!

4) Inflammable drugs:

- Placed in separate enclosures which are made for inflammable drugs and gases with good ventilation.

6 Staffing

- There should be **Drug and therapeutic committee** for advice and decision-making.
- A chief pharmacist must be in a hospital with more than 200 beds.
- 2 pharmacists for 100-bedded hospital.
- 3 pharmacists for 200-bedded hospital.
- 7 pharmacists for 500 beds or more in the hospital.

• Role of chief pharmacist:

- ❑ Supervise and maintain operation of the pharmacy ensuring safe, accurate, and efficient dispensing of medications.
- ❑ Assign, assist, and supervise work of the pharmacy staff. Perform staff pharmacist duties when required.
- ❑ Direct and modify pharmacy policies and procedures according to established pharmaceutical principles and regulatory requirements.
- ❑ Maintain records and complete required reports and supervise purchasing, receiving, paying for and prescription reporting of Schedule II drugs.

Drug and therapeutic committee

- Represents the **official organizational** line of communication and liaison b/n the medical & pharmacy staffs.
- DTC established at hospital level shall have the following **members:**

- ❑ Medical director – Chairperson
- ❑ Head of the pharmacy section – Secretary
- ❑ Head of the nursing section – member
- ❑ Heads of no less than 4 departments- member
- ❑ Head of administration & finance section

• Functions:

- ❑ Prepare guidelines for the selection, quantification, procurement, storage, distribution and stock control of pharmaceuticals in the hospital.
- ❑ Prepare and maintain DL, formulary & STG.
- ❑ Involve in the clinical evaluation of investigational drugs.
- ❑ Organize continuing education for the medical staff on drugs and their use.
- ❑ Establish ADR reporting & monitoring system.
- ❑ Advise the pharmacy department in the storage, distribution and control of pharmaceuticals.
- ❑ Advise the medical staff on issues related with drugs.

Formulary system

- method by which the medical staff of an institution, working through the DTC, evaluates and selects from among the numerous available drugs those that are considered most useful in patient care.
- important tool for assuring the **quality of drug use and controlling its cost.**

• To be **effective**, the formulary system must have;

- ❑ The approval of the organized medical staff
- ❑ The agreement of individual staff members
- ❑ Properly organized, functioning DTC of the medical staff

• **Benefits of an effective formulary system:**

- ❑ Approved and efficacious drugs that all practitioners will have available for use
- ❑ Drug therapy at lower cost
- ❑ Consistent supply of drugs

• **List of formulary drugs are placed -alphabetically and/or therapeutic category:**

- ❑ The drug information section includes:
 - ❑ Generic name
 - ❑ DF(s) and strength(s)
 - ❑ Indications, contraindications, precautions, side effects
 - ❑ Dosage schedule
 - ❑ Drug interactions

“A SURGERY IN A PILL” MANAGEMENT OF DIABETES



Luminal Coating of the Intestines

Introduction

Diabetes mellitus the body does not respond properly to insulin which is the hormone that helps convert blood sugar or glucose into energy either because the body is insensitive or too little insulin is produced. **Rather than depending on insulin, the glucose blood level could be reduced by decreasing the absorption**

Recent Development

- Scientists used a material that can adhere to the intestines and dissolve within hours called “**Sucralfate**”
- Sucralfate was engineered into a novel material that can coat the intestines without requiring activation by gastric acid “**Luminal Coating of the Intestines**”
- The LuCI depending on the pH of the media will form a layer of water immiscible translucent layer that will prevent [mainly formed at lower HCl concentration]
- The intestines absorption capability of sugars will be reduced

Result

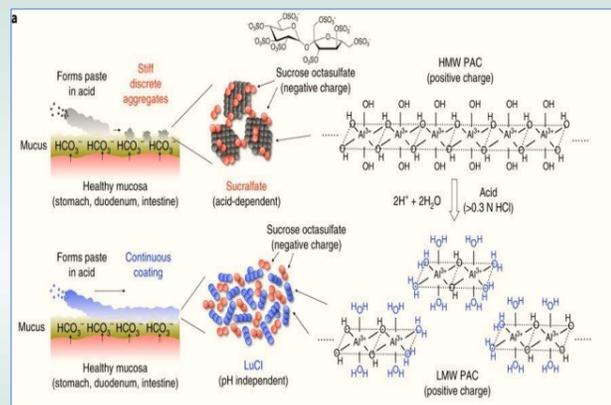
- The LuCI limited the nutrient contact with the small intestine and lowered the blood glucose response after a meal
- One hour after receiving the LuCI, the blood sugar levels were reduced by 47%
- The effect on glucose response was not lasting and the coating dissolved 3 hours later

Abstract

The development of luminal coating of the intestines that could temporarily coat the intestines and prevent nutrient contact with the lining in the proximal bowel and avoid post-meal spikes in blood pressure

Objectives

- Reduce blood sugar level
- Reduce body weight and obesity
- The use of LuCI in drug delivery to the gastrointestinal tract such as proteins [Insulin]



Conclusion

- The development of this drug, will be helpful in management of diabetes by **reducing sugar absorbance** and reducing the dependency on insulin
- **Reduce the obesity** that increase the risk of having diabetes by 80%
- **Reduce the need for surgical procedure** to reduce weight
- Could be used also in **delivery of gastric sensitive drugs**

PHARMACY AUTOMATION; THE NEW DISPENSING MODEL

Let's the profession grows up!

FASTER DISPENSING
MORE COUNSELING!!

Names: Esraa Haitham u17103895, Salma Amgad u17101105. Supervised by: Dr. Feras Jirjees

Background

As the profession has accepted increased responsibility for improving patient outcomes through implementation of pharmacist's patient care services, automation has been applied to organize and improve the accuracy and efficiency of the medication use process. Pharmacy automation is any technology, machine or device linked to or controlled by a computer software and used to do work, and it is relied upon to free the pharmacist from technical tasks.

The upsides



The downsides



New Medical devices and Technologies in hospital pharmacies:



Fully Automatic Unit Dose Packing: to delisted and pack all medicines.

Unit does Medication Dispensing: where every drug is identified separately with a



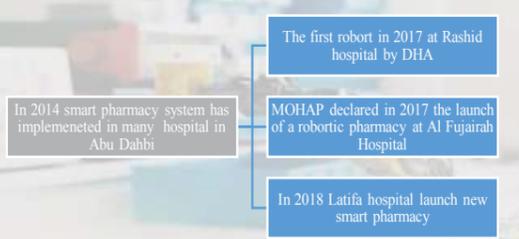
Automated Guided Vehicles: transport medicines from the Central pharmacy to different areas of the hospital.

The 24hr/7days ATM Automated Dispensing System: used for dispensing pre-approved medicines automatically at a counter directly to the patient.

Electronic Prescription Software: where Robots prepares medicines.



Examples of hospital pharmacy in UAE that launched Robots in their entire work.



Comparison between the traditional pharmacy and the Automation pharmacy across multiple MOHAP outpatient facilities in the UAE for 12 months in 2018:



Indicator	The Traditional Pharmacy	Automated Pharmacy	Diff (%)
Patients Served	14,246	12,759	-10.4%
Prescriptions Filled	22,782	27,719	+12.2%
Number of Sales Dispensed	112,214	114,282	+1.9%
Computer Orders Dispensed	67,677	87,514	+29.5%
Time to Fill Prescriptions	25 minutes	11:04 minutes	-55.7%
Dispensing accuracy (maximum threshold)	4.252	0.81	-81.4%

Market Segmentation



Will the pharmacist role have replaced with robot pill dispensers?

NO, they will gain the chance to perform higher-order tasks such as: counseling patients, performing medication therapy management (MTM), engaging in clinical and specialty programs.

Some benefits of pharmacy automation during covid 19 pandemic.



Conclusion

The real value of pharmacy automation is behind the counter in allowing pharmacists to be more integral part of the care-providing team and in direct interactions with both patients and doctors, ultimately providing more holistic care to the patients.



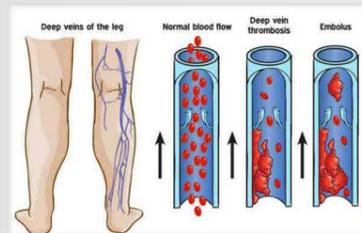
Introduction¹

Venous thromboembolism (VTE) refers to a **blood clot** that starts in a **vein**. It is the third leading vascular diagnosis after heart attack and stroke, affecting between 300,000 to 600,000 Americans each year. There are two types:

- **Deep vein thrombosis (DVT)** Deep vein thrombosis is a clot in a deep vein, usually in the **leg**. DVT sometimes affects the **arm** or other veins.
- **Pulmonary embolism (PE)** A pulmonary embolism occurs when a DVT clot breaks free from a vein wall, travels to the **lungs** and then blocks some or all the blood supply. Blood clots originating in the thigh are more likely to break off and travel to the lungs than blood clots in the lower leg or other parts of the body.

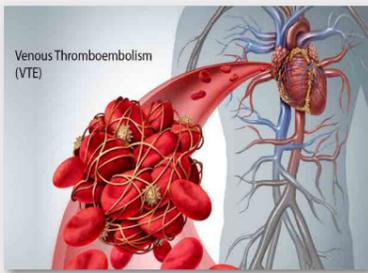
Causes

- Strong risk:**
- Being in the hospital for an extended period.
 - Having surgery (especially hip, knee and cancer-related surgery).
 - Cancer patients are at 4 times higher risk than the general population of developing serious blood clots.
 - Not moving for long periods of time (e.g., due to bedrest or long-duration travel).
- Moderate risk:**
- Age (60+)
 - Personal or family history of blood clots, recent stroke
 - Trauma
 - Using oestrogen-based medication
- Other factors:**
- Obesity
 - Pregnancy or recent birth
 - Smoking
 - Alcohol consumption



Alarming statistics²

- 900,000 people in the US have an initial or recurrent DVT or PE each year.
- An estimated 200,000-300,000 people die each year from PE.
- 25% of PEs present as sudden cardiac death.
- PE has a "Golden Hour". In 2/3 of fatal PE cases, cardiac arrest will occur in the first 1-2 hours.
- PE causes more deaths each year than AIDS, breast cancer, and motor vehicle collisions combined. "see chart 1"



Deaths From PE VS. Other Causes

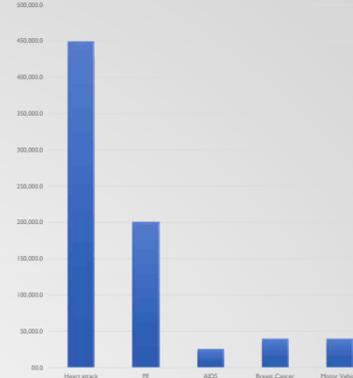


Chart 1. Comparison: deaths from PE vs. other causes

Signs and symptoms⁴

VTE can occur without any warning signs or symptoms and can go **unrecognized** and **undiagnosed** by a healthcare professional. Symptoms that do appear may be associated with either DVT or PE.

- DEEP VEIN THROMBOSIS (DVT):**
- Pain or tenderness, often starting in the calf
 - Swelling, including the ankle or foot
 - Redness or noticeable discoloration
 - Warmth

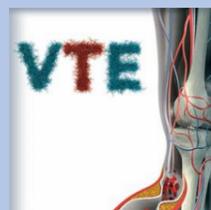
- PULMONARY EMBOLISM (PE):**
- Unexplained shortness of breath
 - Rapid breathing
 - Chest pain (may be worse upon deep breath)
 - Rapid heart rate
 - Light headedness or passing out

Treatment⁵

DVT and PE are **serious, life-threatening** conditions that require immediate medical attention. Treatment can differ by patient but typically includes blood thinning medication to break up clots and prevent new ones from forming. Depending on specific conditions, a patient might need:

- Anticoagulants (e.g., injectables such as heparin, enoxaparin, or low molecular weight heparin, or tablets such as apixaban).
- Mechanical devices (e.g., compression stockings which may decrease your risk of long-term problems that can be caused from having clots).
- Thrombolytic therapy (e.g., tissue plasminogen activator).

Early **diagnosis** and treatment can often lead to recovery, but long-term complications, such as post-thrombotic syndrome and chronic thromboembolic pulmonary hypertension may occur.



Students

- 1- Nalee M Shaheen U17100084
- 2- Ayah Ammar Al Borom U17101035

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ANABOLIC STEROIDS



ANDROGENIC STEROIDS

ANDROGENIC STEROIDS



INTRODUCTION

Anabolic androgenic steroids (AAS) are synthetic derivatives of male sex hormone testosterone having pronounced anabolic properties and relatively weak androgenic properties. The prominent anabolic effect causes nitrogen retention, increased muscle mass and bone density. They are prescribed medically for the treatment of cases with low testosterone levels due to illness or as a result of inborn errors of metabolism, or muscle wasting. However, since the 1950s, AAS have been used by professional bodybuilders and increasingly by young adults prior to exercise to improve physical appearance and achieve stronger effects. These nonmedical uses of AAS are associated with significant health risks. Mounting evidence indicates that the use of AAS has become an alarming worldwide health problem, especially when used without medical supervision. There is a wide array of serious side-effects associated with AAS use or misuse. These include dyslipidemia, fluid retention, elevated blood pressure, jaundice and malignancies. AAS can also produce some sex- and age-specific side-effects, such as testicular atrophy, infertility, gynecomastia, breast and prostatic tumors in men.

OBJECTIVES

- To determine the prevalence and popularity of AAS use among males in the UAE.
- To identify the level of knowledge regarding the adverse effects associated with AAS use.
- To assess the attitude and practices regarding bodybuilding among males in the UAE.
- To investigate the main reason for using AAS.



METHODS

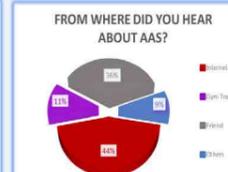
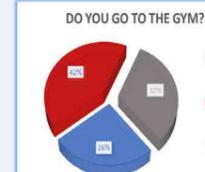
A community-based cross-sectional online (Google forms) survey was used after validation by doctors of college of Pharmacy, University of Sharjah. The survey was carried out among the males in the UAE during the period from 21 January to 13 February 2020. It contained questions covering demographic data, and data assessing awareness and behavior related to AAS use. In total (300) males responded to the survey including Emirati and non-Emirati, and a descriptive analysis was done. Microsoft Excel program was used for the charts formation (Bar chart and Pie charts), and the table was formed by Microsoft Word program.

DEMOGRAPHIC DATA

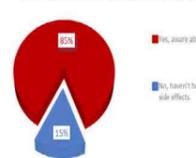
AGE	Percentage %
Less than 18	9%
18-25	59%
25-35	18.3%
35-45	8.7%
+45	45%
NATIONALITY	Percentage %
Emirati	9%
Arab	83.7%
Non-Arab	7.3%

RESULTS

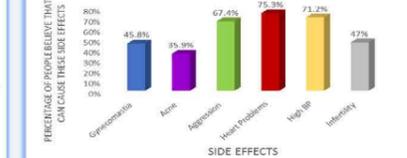
300 responders, most of them were from Sharjah, Dubai, and Abu Dhabi. (89%) have heard about AAS, and (23.7%) have thought about using them, but only 58 persons (19.3%) have already used AAS. Regarding the most important thing for bodybuilding, (78.9%), (70.6%), (31.4%) chose diet, training regimen, supplements respectively. The main purpose that makes people use AAS is bodybuilding (85.1%), and (71%) of them use tablets or capsules. (51.7%) of whom got AAS from pharmacies mentioned that they received counselling. (28.2%) of the users do liver and kidney tests regularly. Only (5.1%) have experienced side effects.



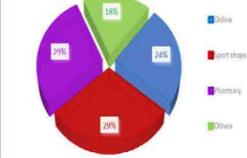
ARE YOU AWARE ABOUT THE POSSIBLE SIDE EFFECTS OF AAS?



KNOWLEDGE AND AWARENESS REGARDING SOME POSSIBLE SIDE EFFECTS



FROM WHERE DO YOU GET AAS?



DISCUSSION

According to the results, there are many people who are fairly aware of AAS possible side effects, especially the effects that are related to the heart and blood pressure. But most of the users consume AAS only for bodybuilding and improved physical appearance, which could be a problem. The main sources for acquiring AAS are the Internet, sports shops, and pharmacies although the pharmacists are supposed to be knowledgeable about the risks of AAS use, and not to provide them unless for a medical purpose. Some people have the intention to use AAS in the future. According to a study done in Al-Ain city (2008), it showed a very high prevalence of AAS misuse among gym users. 60% of the users thought that the benefits of using AAS outweighed the harm. Another recent study in Saudi Arabia (2018) showed that a high proportion of study participants responded "I don't know" to their awareness of the side effects resulting from AAS. The limitations of our study were: short period for distributing the survey, and possible bias of the measures of the outcomes.

CONCLUSION

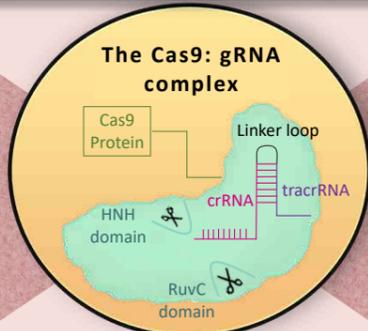
The results of this study provide clear evidence of the prevalence of AAS use among males in general (gym members or not) in the UAE. Also, this study concludes that the knowledge and awareness regarding the effects of AAS are significantly high. Moreover, the prevalence of use was low. Although most of the AAS users are aware about some possible side effects, they are still using them. Therefore, some efforts should be done to restrict the availability of AAS. This would help us to monitor the number of users as well as control the use of those hormones. In this way and by increasing the awareness even more, we can avoid the adverse effects before they happen. Our first recommendation is to implement programs to educate the present and future males in our community about the harmful effects of this drug, to keep the high percentage of knowledge and awareness and to avoid the chance of experiencing any possible side or adverse effects.

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INTRODUCTION

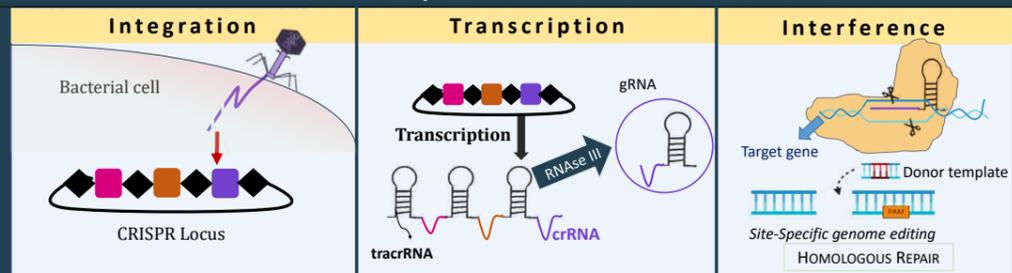
Despite the identification of several disease-causing mutations involved in breast cancer, clinical therapy is often aimed at alleviating symptoms rather than rectifying the mutation in the DNA sequence. The Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)/Cas9 is a ground breaking gene editing tool that is being utilized in various researches involving genomic targets bearing tumorigenic potential.



OBJECTIVE

To provide an overview of the CRISPR/Cas9 mechanism, discuss genes that were edited using this system in context of breast cancer and shed a light on some of the methods that may be used to deliver the system. This may offer insights into the possible application of CRISPR/Cas9 as a therapeutic platform towards the advancement of personalized medicine in breast cancer.

CRISPR/Cas9 MECHANISM



CRISPR/Cas9 AND BREAST CANCER

BREAST CANCER STAGES	Initiation	Promotion & Progression	Metastasis
Gene	BRCA1	HER2	CX3CR1
Experiment	CRISPR-mediated cytosine BE3	Knock-out of exons encoding for extracellular	CRISPR-mediated transcription silencing
Results	Identification of Loss Of Function variants	Suppressed cell proliferation and metastasis	Reduction in skeletal and lung metastasis
Prospective application	Reclassification of BRCA1 Variant of Uncertain Significances	Achieve a therapeutic outcome in clinically significant HER2+ patients	Limit metastasis to the bone

Method	HER2+ cell line	Result
CRISPR-mediated cytosine Base Editing (CBE)	HER2+ cell line	Reduced colony formation
CONTROL	HER2+ cell line	Normal colony formation
CRISPRi	HER2+ cell line	Reduced colony formation

DELIVERY METHODS

Viral Vector	VIRAL METHODS		Method	NON-VIRAL METHODS	
	Adenovirus	Lentivirus		Electroporation	Lipid Mediated
✓	Excellent transduction rates	Efficiency even in quiescent cells	✓	No size restrictions	High transfection rates
✗	Strong immune response	Higher insertional mutagenesis risk	✗	Prone to causing cellular lysis	Culture condition affect efficiency

CONCLUSION

Manipulation of the aforementioned genes using this Nobel Prize winning tool has, in most cases, led to significant suppression in various stages of tumorigenesis. However, despite all the traction it has gained, limitations with regards to its ethics, off-target effects, mutagenesis, and delivery necessitates further studies to rectify these issues. For the conventional use of this system in the near future, both precise knowledge of pathogenic variants as well as optimization of the system itself is essential to venture into the new era of personalized medicine.

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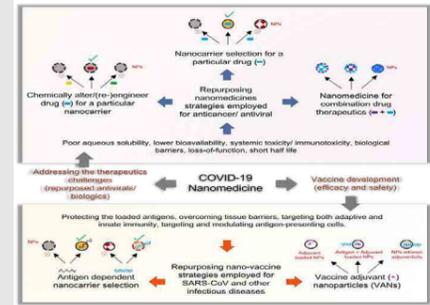


Introduction

The current global health threat by (COVID-19) has fueled an urgent deployment of advanced therapeutic options and large-scale approaches such as specific alternative antiviral methods. Nanotechnology is one of the most critical options that we can exploit to serve the global demand for effective diagnosis, treatment and mitigation of the spread of COVID-19 infection. It will be even vital when preparing for future pandemics.

Such engineered virus "nano-enemies" direct the safe and effective delivery of available therapeutic options, blocking the initial interactions of viral spike glycoprotein with host cell surface receptors, and disruption of virion construction.

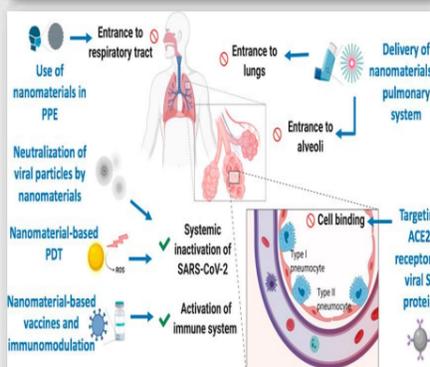
Nano-technology can be applied in drug delivery to the pulmonary system to block the interaction between angiotensin-converting enzyme 2 (ACE2) receptors and viral S protein. Moreover, the concept of "nanoinmunity by design" can help us to design materials for immune modulation, either stimulating or suppressing the immune response. Additionally, it can be used in photodynamic therapy (PDT) which stands as a unique approach to inactivate SARS-CoV-2. Using a light-based method PDT attacks target cells via the excitation of photosensitive agents called photosensitizers (PS), and the effective delivery of PS would be achieved by encapsulating them within NP since they're poorly water soluble.



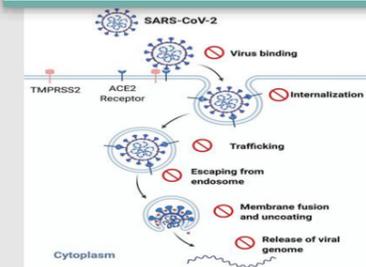
Objectives

- Considering what we know so far about the life cycle of the virus, we outline the key steps where nanotechnology could counter the disease.
- We discuss recent as well as ongoing nanotechnology-based therapeutic and prophylactic strategies to fight against this pandemic, outlining the key areas for nano-scientists to step in.

Nanomaterials as promising immunomodulators to manage the sub-acute COVID-19 complications:



Nanotechnology tools to inactivate SARS-CoV-2 in patients:

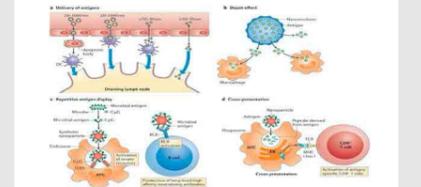


- Because the focus is also on the development of a drug specific to SARS-CoV-2, a good entry inhibitor could be based on blocking the S spike protein interaction with the cellular ACE2 receptor. Coronavirus S proteins promote the entry of the virus into host cells and are the area of focus for various antibodies. The surface S protein (spike glycoprotein) of virions is the site for recognition and membrane fusion. The S protein (a trimer) gets cleaved into S1 and S2 subunits. The S1 subunits contain the receptor binding domain (RBD) and are released in post-transformation conformation. S1 directly binds to the peptidase domain (PD) of the ACE2, while S2 subunits help in the membrane fusion that is critical for viral infection. S2 contains cleavage sites and is sliced by host proteases.
- Airborne nanomaterials are optimally suited to penetrate the deep lung due to the physicochemical properties of such aerosols, existing on the same size scale particles that penetrate most readily to the deep airways.
- Active targeted nano-carriers offer the opportunity to cross biological barriers and attain therapeutic concentrations in sheltered viral reservoirs. It is further possible to target a specific organ and cellular and intercellular sites involved in the pathophysiology of SARS-CoV-2 (possibly ACE2 expressing cells, domains of viral S protein, cathepsin binding sites, etc.).

Nanoparticle-based COVID19 vaccines

Although traditional vaccines that rely on inactivated or live-attenuated virus have more extensive track of use among people, but they have downsides, including lengthy manufacturing time. Therefore, new types of vaccines such as mRNA or DNA vaccines have already joined the race. and the nanotechnology has paved new pathways for their development by 2 strategies

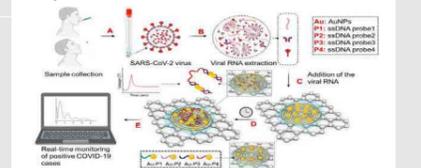
- strategy 1: Nanotechnology-Based vaccines**
Nanoparticles and viruses operate at the same size scale; therefore, nanoparticles are able to access within the cells to enable translation of antigens or directly the antigens (subunit vaccines). Many approved vaccine technologies utilize nanotechnology by encapsulating the genetic material or the antigens in nanoparticles such as lipid nanoparticles (LNPs), thereby protecting the fragile genetic material and prevent their immature activation by the cell, additionally nanoparticles can;
- 1- improve the delivery and presentation of antigens to the antigen-presenting cells (APCs) and the dendritic cells (DC) which can promote the immunity response.
 - 2- can be administered by oral, intranasal, subcutaneous and intramuscular injections, offering targeting advantage to locations such as lymph nodes.
 - 3- Nanoparticles can target both adaptive and innate immune system response.



- Strategy 2: Vaccine Adjuvant Nanoparticles.**
Beyond antigen delivery, nanoparticles have the capability to co-deliver adjuvants to help prime the desired immune responses. Vaccine adjuvants nanoparticles (VANs) are considered to improve the overall efficacy and safety of the generated immune response. Additionally, they can reduce the required antigen dose making it available for larger population. Adjuvants have immunostimulatory properties to help boost the innate immune response by binding to specific receptors such as Toll-like receptors which will in turn recognize the specific antigen and ultimately mount a protective immune response through the innate immunity, which in turn will upregulate T and B cells activating the adaptive immune response.

Nanotechnology-Enabled diagnostic approach

A large-scale, efficient and fast diagnosis of the SARS-CoV-2 is essential to downregulate its spread across communities. Nowadays, the standard procedures for detecting the covid-19 virus are based on reverse transcription polymerase chain reaction (RT-PCR) which can be expensive in some countries.



However, preliminary ideas on nanotechnology-based assays to detect SARS-CoV-2 are also available.

How about a rapid (less than 5 min), low-cost, easy-to-implement, and quantitative method of detection. Herein, we can detect the SARS-CoV-2 genetic material utilizing a hand-held reader that has a quantitative paper-based electrochemical sensor chip. This chip uses gold nanoparticles (AuNPs), capped with highly specific antisense oligonucleotides (ssDNA) that can target the N-gene, a gene that codes for the viral nucleocapsid phosphoprotein. The output signal will be amplified only in the presence of its target (SARS-CoV-2 RNA) within less than 5 min of incubation time. Nonetheless, it is highly specific without any further need for amplification as with the PCR test. The feasibility of the sensor even during the genomic mutation of the virus is also ensured from the design of the ssDNA-conjugated AuNPs that simultaneously target two separate regions of the same SARS-CoV-2 N-gene. Such simple, low-cost procedures could be utilized in developing countries where the medical infrastructure is not well established.

Photodynamic Inactivation of SARS-CoV-2

Photodynamic therapy (PDT) stands as a unique approach to inactivate SARS-CoV-2. Using a light-based method, PDT attacks target cells via the excitation of photosensitive agents, called photosensitizers (PS) that generate reactive oxygen species (ROS) in the presence of oxygen, which ultimately results in cell death. It was not until the 1970s that PDT was first used clinically against viruses, exploiting ROS production to damage virus proteins, nucleic acids, and if present lipids. Scientists suggest the use of photosensitizers to act as a decoy and bind to SARS-CoV-2 instead of porphyrin to prevent severe hypoxia in ARDS. Most PSs are hydrophobic and aggregate in aqueous solutions, affecting their photochemical and photobiological properties. For this reason, scientists have proposed a promising approach for photodynamic inactivation of viruses with NPs.

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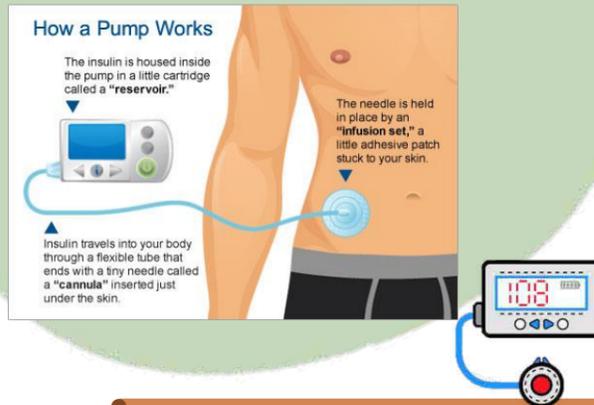
- Carsten Weiss, Marie Carriere, Laura Fusco, Iliaria Capua, Jose Angel Regla-Nava, Matteo Pasquali, James A. Scott, Flavia Vitale, Mehmet Altay Unal, Cecilia Mattevi, Davide Bedognetti, Arben Merkoçi, Ennio Tasciotti, Açelya Yilmazer, Yury Gogotsi, Francesco Stellacci, and Lucia Gemma Delogu
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Diabetes Insulin Pump

What is insulin pump, How does it work?

An insulin pump is a machine which enables insulin to be delivered automatically, or in response to instructions given by a patient. The pump is programmed to constantly give a required amount of insulin.



Who should consider the insulin pump option?

- Usually use for Type 1 diabetic patients.
- Take insulin more than 3 times per day.
- Have high or low blood glucose often.
- Want a more flexible lifestyle.
- Want to lower the risk of **long-term** diabetes complications.



Cost of insulin pump in the UAE? 28000 AED

What to do in case something goes wrong?

In case of hypoglycemia (when blood glucose level is < 50 mg/dL):

1. A patient should treat with 15 grams of fast-acting carbohydrate.
2. The patient should re-test blood glucose after 15 minutes, If blood glucose still low, the patient should suspend a pump, treat with 30 grams of fast-acting carbohydrate
3. The patient should repeat the test as needed until blood glucose is back into target range, and then resume your insulin pump.



In case of hyperglycemia (when blood glucose level is > 250 mg/dL):

If ketones are negative:

1. Patient should take a correction bolus using the pump.
2. Patient should increase fluid intake (8 ounces every hour) to prevent dehydration.
3. The patient should recheck blood glucose in 1-2 hours.

If Ketones are Positive

1. Take correction bolus by syringe or insulin pen
2. Change pump infusion set (pod) and site.
3. Increase fluid intake (8 ounces every hour) to prevent dehydration.
4. Recheck blood glucose in 2 hours



Challenges

Using an insulin pump with its disposable infusion sets, cartridges and batteries, is more costly than using other insulin delivery tools such as pens or syringes.

Insulin dose adjustment
Initially a patient can expect lots of ups and downs in blood glucose levels.



Being connected to a piece of equipment 24 hours a day.



A patient requires a certain level of skills to program the insulin pump and make changes to basal rates, set bolus doses, alarms and so on.



Features to consider when have insulin pump

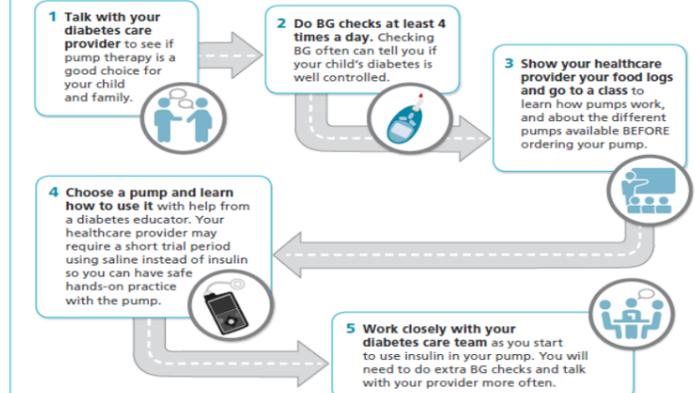
- ✓ Calculating insulin
- ✓ Tracking active insulin
- ✓ Bolus types
- ✓ Insulin delivery pump
- ✓ Insulin reservoir/cartridge size
- ✓ Insertion devices

Who can provide this pump in the UAE?



What does it take to get started on a pump?

6 to 12 months after diagnosis:



After starting an insulin pump

About 1 month after starting a pump, you and your child must go to an advanced pump education class where you will learn how to:

- Better manage your glucose highs and lows, lifestyle, and sick days while on the pump
- Use the advanced features on your pump

How does insulin pump affect lifestyle of patient?

- It is recommended that remove the pump during vigorous contact sports, the pump should not be removed for longer than two hours.
- a patient should take extra supplies of: Pump batteries, Insulin and insulin pens or syringes in case the pump fails and Glucose/ketone meter.
- A patient should accurately calculate carbohydrates intake so that the pump can deliver the correct bolus dose at meal and snack times.
- A patient can put pump during sleeping time under pillow or in bed.

Reference

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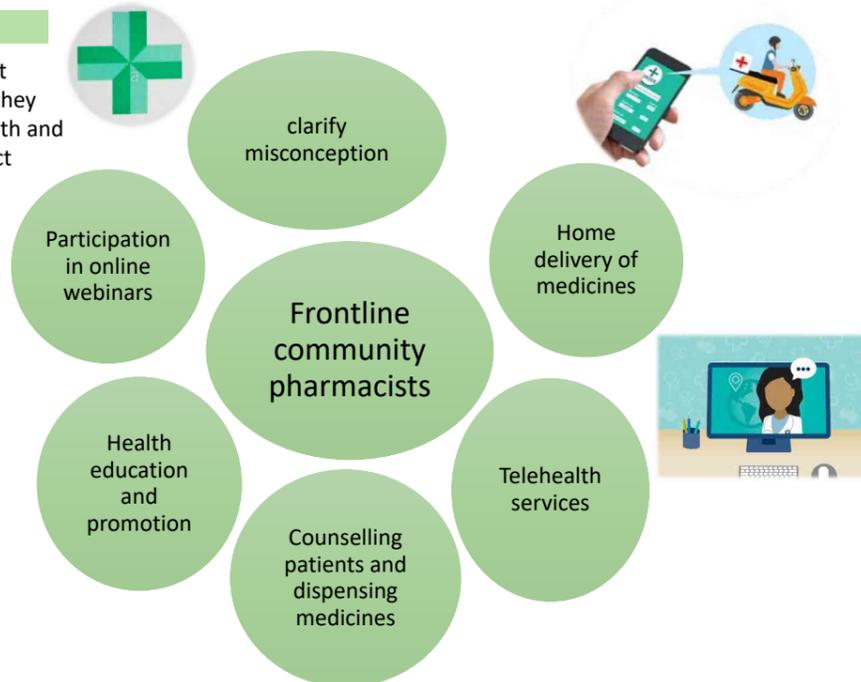
Role of community pharmacists during the COVID-19 pandemic



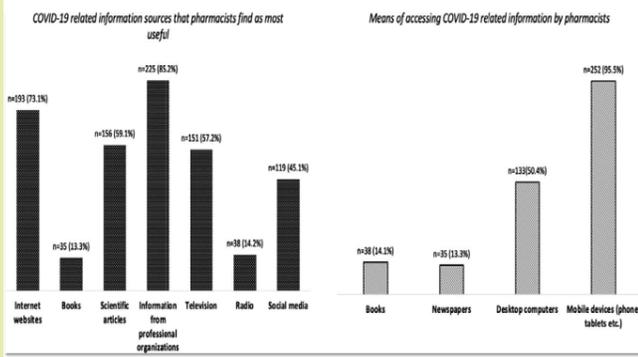
Prepared by: Aminah Samer U16103106 Supervised by: Dr, Manal S. Al-Sharawy,

Introduction

Community pharmacists are the most accessible healthcare professionals, they stayed at the frontline for public health and safety and continued to provide direct patient care despite restrictions.



Pharmacists' information sources and means of access during COVID-19 pandemics:



Conclusion

The COVID-19 outbreak has unearthed new opportunities for community pharmacists therefore their role was not only limited to their routine daily services during the pandemic instead they took additional responsibilities to assure patient safety, satisfaction, and accessibility to medicines.

Summary of community pharmacy standard operating procedures implemented in Jordan during COVID-19:

Category	Action	Description/Examples
Pharmacy layout or physical organization	Restriction on number of allowed patients inside the pharmacy according to pharmacy total area	For pharmacies smaller than 64 square meters, patients are not allowed inside the pharmacy and services should be provided from behind a barrier that is fixed 1 m away from the door for one patient at a time. For pharmacies larger than 64 square meters, patients are allowed inside the pharmacy provided that they step on floor marks 2 m apart. Floor marks or signs 2 m apart for customers.
Precautionary measure for customers	Daily disinfection Social distancing between pharmacist/customer and customer/customer Hand sanitizers provided at the entrance Closure enforcement and extensive decontamination policy	Comprehensive disinfection for pharmacies on daily basis. Social distancing between the pharmacist and customers of more than 1 m (from behind the counter) and social distancing between customers inside the pharmacy of 2 m apart. Hand sanitizers are provided at the entrance of the pharmacy and patients/customers are directed to use it before entrance to the pharmacy. If one of the pharmacy employees is infected with the coronavirus, a mandatory closure of the pharmacy for up to 14 days is applied by the Jordan Food and Drug Administration (JFDA) and an extensive disinfection is performed for the pharmacy.
Precautionary measures for pharmacists	Practice social distancing and hygiene practice Use protective clothing and devices Continuous disinfection/decontamination Provide hand sanitizers in various locations for the pharmacy employees	Pharmacy employees should practice social distancing of more than 1 m apart, and advise employees to avoid touching their eyes, nose, and mouth. Wear laboratory coats, masks, protective goggles (if possible), and gloves that should be periodically changed. In addition to performing daily disinfection of the counters and public area of the pharmacy, disinfect goods and medication boxes supplied by the wholesale distributors. Use of hand sanitizers and soap and water after each money transaction, filling a prescription, and receiving medication boxes and medical supplies from wholesale distributors.
Supply management	Reduce administrative barrier for restricted drug refill	Sedatives and restricted medications are allowed to be refilled based on the last available prescription or based on a photo of a prescription sent from the physician/patient to the pharmacy via email or text messaging service.
New services	Public awareness and education New drug policy to protect the supply of important drugs and medical devices Helpline Electronic platform for ordering medication refills of chronic disease Medication home delivery	Provide public educational posters about the sign and symptoms of COVID-19 and the proper protective measures and educate patients on how to distinguish among common cold, flu, and COVID-19, and make sure they know when to seek medical help. New guidelines restricted dispensing of hydroxychloroquine by only prescriptions from a specialist physician and require pharmacists to keep records of these prescriptions. In addition, the JFDA controlled the prices of surgical masks, as well as rubbing alcohol, within a reasonable price range to make them accessible to the public. A telephone hotline named "Hello-Pharmacist" to provide customers with information on the nearest community pharmacy in their neighborhood during the lockdown. Electronic platform called "Emed Hakeem" for public health-insured patients with chronic diseases to meet prescription refilling needs. Free home delivery services for chronic drugs and pharmaceutical supplies, as well as milk formulas, provided that pharmacists follow the announced mandatory regulations issued by JFDA in this regard.

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The different fields of pharmacy



Hospitals are among the most needed institutions in the pharmaceutical profession so that they can dispense appropriate prescription medications to patients.

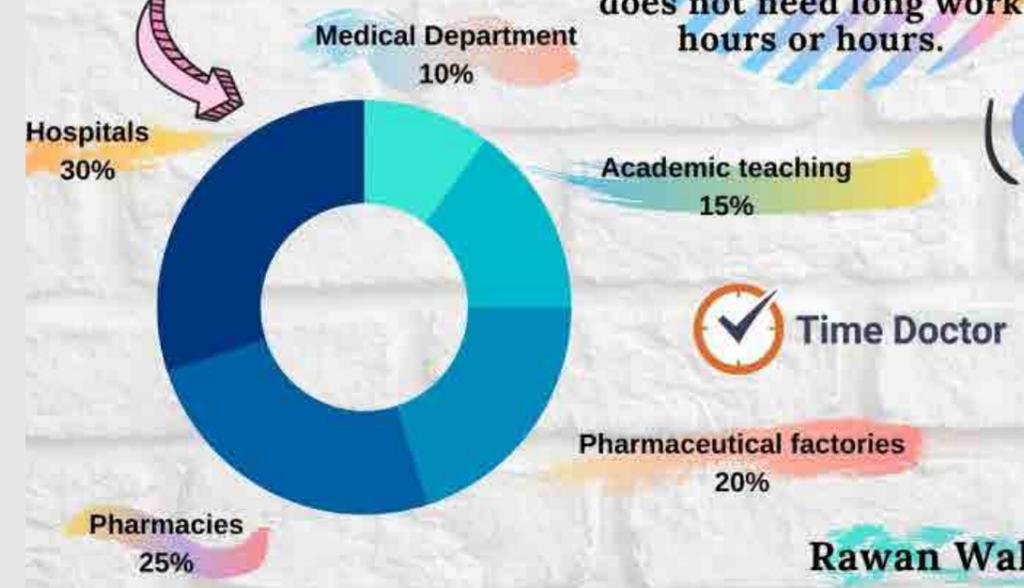
Academic teaching is a field of pharmacy work, academic work within university education or in colleges specializing in medicine or pharmacy, but must obtain a higher degree in both master's and doctoral degrees.

Pharmacies are one of the most important areas of work that the pharmacist seeks, because it helps him to develop his skills in the field of pharmacy and is considered a suitable personal income for the pharmacist.

Pharmaceutical factories need to have pharmacists to work on their research team, in order to follow up on the drugs that are manufactured, and they provide the pharmacist with a relatively high salary due to long working hours.

Medical management is one of the areas that some pharmacists seek, especially those who have sufficient experience in the work of pharmacists within hospitals, preferably the pharmacist because he does not need long work hours or hours.

Relative sequence



Rawan Walid U20102268

CALCIUM IMBALANCES



Submitted to: Dr Rania Harati

Physiological Role of Calcium^[2]

Calcium is a vital element that serves an important role in skeletal mineralization, muscle contraction, blood coagulation, enzyme activity, neural excitability, regulating heart beat and fluid balance within the cells. Three major hormones PTH, vitamin D, calcitonin along with few other hormones maintain the calcium homeostasis.

Treatment

The treatment for calcium imbalances differs based on whether it is excess or deficit.

Hypercalcemia:^[4]

- IV fluids and diuretics: helps lower the calcium level in blood, in order to avoid heart rhythm problems or nervous system damage.
- Prednisone: Short-term use of steroid pills is effective when hypercalcemia is caused by high vitamin D levels.
- Bisphosphonates: Intravenous drugs used to treat cancer related hypercalcemia.

Hypocalcemia:^[5]

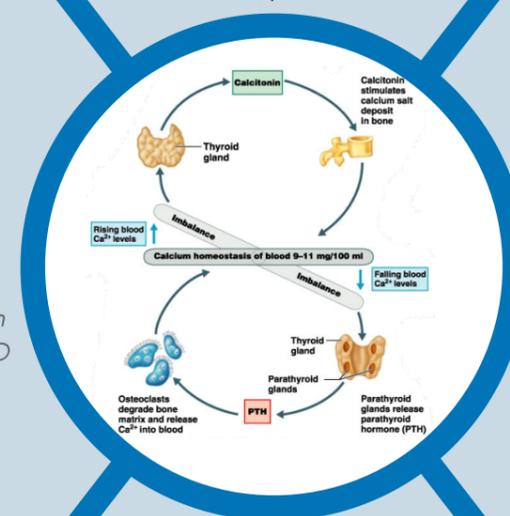
- Intravenous (IV) calcium gluconate: for treating acute symptomatic hypocalcemia.
- Calcium and vitamin D supplements: for treating chronic hypocalcemia.

Causes of Hypocalcemia^[2]

- Hypoparathyroidism: Low PTH disturbs Calcium absorption.
- Some medications (phenytoin, phenobarbital, rifampin): They alter bone and mineral metabolism.
- Malabsorption Syndrome: Decrease in absorption of vitamin D or calcium.
- Irregular phosphate levels: Calcium and phosphate has a reciprocal relationship.
- Inadequate calcium or vitamin D in the diet.

Hypocalcemia^[2]

Hypocalcemia is defined as lowered levels of calcium in the blood plasma.



Hypercalcemia is defined as elevated levels of calcium in the blood plasma.

Hypercalcemia^[2]

Causes of Hypercalcemia^[2]

- Hyperparathyroidism: High PTH causes high blood calcium levels.
- Malignancy: high secretion of PTH-related protein, metastasis to bones causing calcium release.
- Medications (Lithium): increase PTH release.
- Genetic Factors: Familial hypocalciuric hypercalcemia.
- Immobility: Demineralization of stressed bones releasing calcium.
- Calcium/Vitamin D supplements.

Symptoms of Hypocalcemia^[1]

- Tetany, muscle cramps. **Rationale:** Low calcium levels increase the permeability of neuronal membranes to sodium ions, causing a cumulative depolarization.
- Dry skin, brittle nails, coarse hair. **Rationale:** Hypocalcemia causes changes in the epidermis.
- Fatigue, depression, personality changes. **Rationale:** Hypocalcemia interferes with neurological functions causing fatigue and personality changes.
- Heart Weakness, arrhythmia. **Rationale:** Severe hypocalcemia may cause arrhythmia as calcium plays an important role in myocardial contraction.

Symptoms of Hypercalcemia

- Anorexia, nausea, vomiting, abdominal pain.^[3] **Rationale:** Hypercalcemia causes increased gastric acid secretion.
- Polyuria, polydipsia, constipation.^[3] **Rationale:** Hypercalcemia causes disturbance in the renal capacity in concentrating the urine, resulting in excess urination and consequently excess thirst. Constipation is caused due to the associated dehydration.
- Lethargy, depression, fatigue, confusion.^[2] **Rationale:** Hypercalcemia interferes with various regions of the brain to produce a variety of psychiatric symptoms.
- Arrhythmia.^[2] **Rationale:** Excess calcium can interfere with the electrical impulses that moderate heartbeat causing irregular heart rhythm.
- Generalized aches and pains.^[2] **Rationale:** Excess levels of calcium in blood results by extracting the calcium from bones causing bone and muscle weakness.

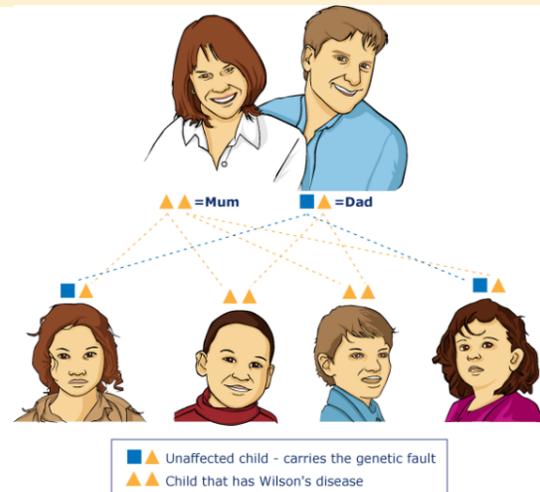
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WHAT IS THE DISEASE?

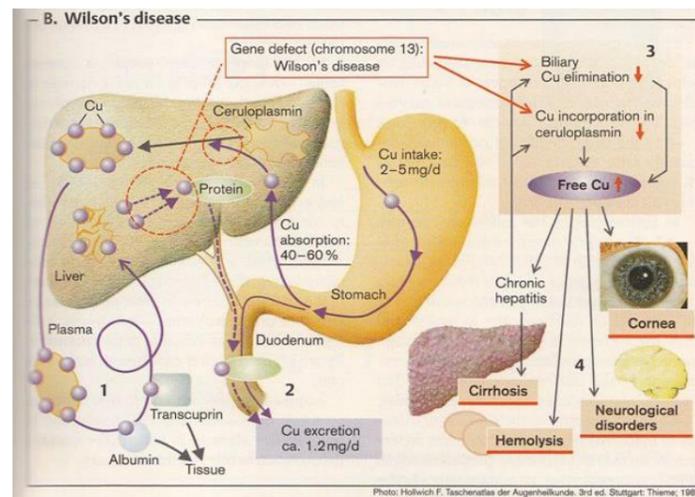
Wilson's disease (WD), also known as Hepatolenticular degeneration;

- Extreme accumulation of copper in liver, brain, eyes & other organs.
- Recessively inherited genetic disorder.
- Defect in the biliary excretion of copper.
- Gene mutation happens on chromosome 13.
- In homozygous form → reduced function of the hepatic ATP7B protein (copper-transporting ATPase 2).



Pathophysiology of Wilson's Disease:

In WD, the liver discharges less copper into bile, and more copper stays in the body spreading by blood.



SIGNS & SYMPTOMS

Wilson's disease is present at birth, but signs and symptoms appear as the copper builds up, which include:

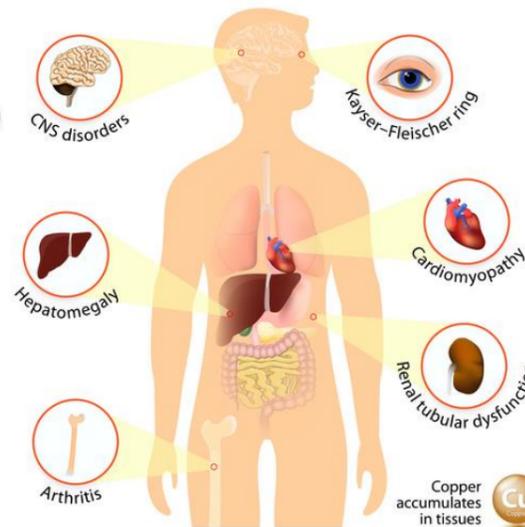
- Kayser-Fleischer ring
- Liver disease
- Neurological symptoms
- Pathological changes in other organs & tissues

Neurologic symptoms

- Tremors
- Emotional problems
- Difficulty with hand writing
- Dysarthria
- Parkinsonism

Liver failure

- Hepatomegaly
- Ascites
- Variceal bleeding



DIAGNOSIS & SCREENING

Laboratory Data

- Blood tests to check liver function & levels of ceruloplasmin
- Urine test to measure amounts of copper excreted per day

Others

- Eye examination to look for Kayser-Fleischer ring
- Liver biopsy
- Genetic testing

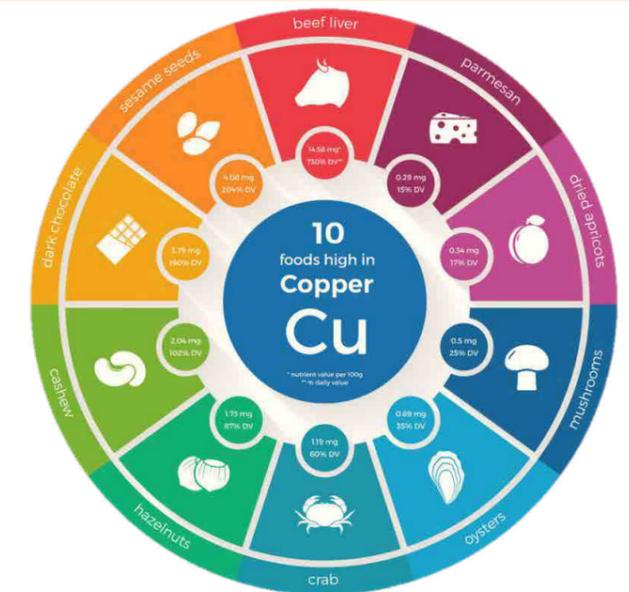
Parameter	Normal	Wilson's
Plasma Ceruloplasmin	>200 mg/l	<200 mg/l
Urine copper	<0.6 μmol/24 h	>1.6 μmol/24 h
Hepatic copper	< 250 μg/g dry wt	> 250 μg/g dry wt
Kayser-Fleischer rings	Absent	Present in neurological cases, but may be absent in younger children

MANAGEMENT

Non-pharmacological

Diet & Nutrition

- Limit copper consumption in diet.
- Check the copper levels in tap water, if the pipes are made of copper and avoid copper utensils.



Pharmacological

A. Chelating Agents

They're used to excrete copper out of the tissues by binding to it → forming a water-soluble complex → increasing its excretion in the urine.

- Penicillamine
- Trientine

B. Maintenance treatment

Zinc is absorbed by the intestinal cells → increasing the production of metallothioneins present in the brain, liver intestine & other tissues → preventing the absorption of copper from the intestines.

- Zinc Sulphate
- Zinc Acetate

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Messages from Society Member



مجتبى فتح الرحمن فقيري
رئيس الجمعية العلمية لكلية الصيدلة

إن تقدير الذات وتحفيزها أمران أساسيان لتقدم الإنسان وتحقيق أحلامه لا سيما في حياة مليئة بالصعوبات التي لا يمكن قهرها إلا بالعزيمة القوية والإصرار على بلوغ الهدف. ولأجل ذلك على الفرد أن يحرص على تحفيز نفسه بنفسه أولاً، وإحاطتها بأشخاص إيجابيين لدفعه دوماً للأفضل ثانياً فليس هناك تحدٍ أكبر من تحسين ذاتك وتطويرها. **فهذه نصيحتي لزملائي الطلاب فالحياة الجامعية ليست دراسة وحسب فهناك العديد من الفعاليات والأنشطة الطلابية التي تنمي مهارات الفرد وتكسبه العديد من المميزات التي قد يحتاج إليها في المستقبل.** فمن منظوري الشخص فالموازنة بين الدراسة والأنشطة الأخرى أكبر تحدي يواجه الطالب في حياته الجامعية فإذا اردت النجاح عليك اتباع أربع خطوات لتحقيق إنجازاً عظيماً، وهي: اختر مهنة تحبها، امنحها أفضل ما لديك، اغتنم الفرص التي تلوح لك، وكن أحد أفراد الفريق فالمُنافسة الحقيقية دائماً ما تكون بين ما تقوم بعمله وما أنت قادر على عمله، فالسر في ذلك هو أنك تقيس نفسك مع نفسك وليس مع أي شخص آخر. النجاح يجذب النجاح، ليس هناك مفر من هذا القانون الكوني العظيم، فإن رغبت في جذب النجاح فأحرص على تحقيق جزء منه، سواء كنت عاملاً أو أميراً.



Sara Dweek

Studying and working hard are the traditional ways of learning, but I believe that they are not the limit. **The adventure of life with its unexpected rollercoasters teaches us what no books can.** We must push ourselves to experience the exhilarating moments and take on the challenges of life. This is exactly the motivation I needed to join the SSCP in my fourth year of pharmacy. I was ready to expand my skillset and outlook.

Being a part of SSCP played a major role in my personal growth journey to not only become a competent pharmacist, but to accumulate the experience of teamwork, organization, problem solving and many more. Its through the SSCP and its many events, which often came in the busiest of times, that I learnt to **organize myself, my time, my priorities** and was able to **maximize my potential.**

“I’ve come to believe that each of us has a personal calling that’s as unique as a fingerprint - and that the best way to succeed is to discover what you love and then find a way to offer it to others in the form of service, working hard, and also allowing the energy of the universe to lead you.” Oprah Winfrey

Ever since I’ve entered the college, I’ve always wanted to be part of the SSCP and to leave my fingerprint, and this year **it was a dream come true.** Being part of the SSCP made me put all of my potentials and efforts to present my college in the best image It made me want to achieve bigger things, and never stop! Although I was hesitant at first at how I’ll organize my time between studying and the extracurricular activities of the society, but I thought about it and I said if I dream it then I should do it and I did it! Because everything is possible if I manage my time. As they said, **“Believing in yourself is the first secret to success!”** And with that I can officially say I am happy to be part of the scientific society family.



Marian Elias Allabed

I’m not here to say what a lot of members before me have said, of how participating in the SSCP was one of the best choices they did, how it didn’t affect their grades, etc...

On the contrary, **I’m here to say that life is about chances,** choices, risks and adventures. It was a chance, a risk taken for sure and a choice that led to my enrollment in the SSCP, which in turn turned into an adventure, an experience that developed into inner growth. If you feel like taking a chance in this life, if you are looking for a bit of excitement and unpredictable turn of events, then SSCP is one of the necessary stops in your journey. Make sure to savor it!



Marwa Magdy

Ever since my parents told me the meaning of my name “Dana” when I was a little dreamy girl, I made it a goal of mine to turn it into my living reality. Dana is the biggest, shiniest, and most precious pearl or diamond to ever exist. And now, as a young lady who’s still learning and paving her way into the world of success, I want to shine as bright as I could ever get, even brighter than diamonds, not only for myself, but also for others, for giving light to people surrounding me, and growing together, along with them into what makes us all stand with pride and satisfaction in the future.

To my Dear Colleagues: **It takes time for the charcoal to turn into a beautiful shiny pearl,** so why should we rush ourselves to thrive? Believe in yourselves, and never compare your value or skill to others, because each of us grows in his or her own pace. Trust the process, and take your time to shine. Let’s shine and grow together, **My Dear Friends!**



Dana Majed Sharaf



Mohammad Al Kalla

College typically is where you learn intellectually, but actually, college is also what carves your personality and builds you as an individual, it puts you in front of many choices and opportunities and it is up to you to take the challenge or stay in the box, for me **I chose to take the challenge.** I have always participated in many events held by the college and university, where I **learned** and **experienced** many things, I met new people and made new friends, all those experiences have strengthened **the leadership teamwork** and **discipline** in me and made me strive for more, so this year I decided to take a bigger step and join the scientific society, which plays a big role in the college as it supports students, listen to their problems and suggestions, take their opinion and work the hardest for their benefit and interest, connect them together, love them and be loved by them.

In my position, **I really enjoyed being trusted, loved, and supported by that many people** and I want to keep working hard to please them. In conclusion, I would like to encourage all students to live their college life to the maximum and not hesitate in participating in any event or project, to jump out of their comfort zone which is their biggest enemy, because as much as this journey is beautiful, it is short.

Since day one in pharmacy I always had a passion to know the history and the new up to date information about medicine and particularly drug delivery systems.

Being part of the SSCP gave me the chance to participate in international conferences and the opportunity to be aware of new things related to pharmacy field. The SSCP opened new doors for us to explore about communication, networking, and to gain more scientific knowledge.

"The purpose of life is to live it, to taste experience to the utmost, to reach out eagerly and without fear for newer and richer experience."

Eleanor Roosevelt



Basmala Hosam



Salma Kamal

Since my very first semester in UOS, I've been fond of the SSCP and their events. Working on the "behind-the-scenes" of events and seminars was something I admired and desired; however, taking a step forward and giving it a shot was quite challenging since I was more or less poor at time-management.

In fact, I had to overthink it before submitting my form but what undeniably pushed me forward was how life-changing I'd seen it for many previous members. Unfortunately, due to the novel COVID-19 pandemic, we were not able to get the same experience as those previously enrolled yet I'm positive I'm not regretting it.

Really wish we'd make tons of accomplishments and almost certainly going for another year.

As a fourth year pharmacy student, struggling with online learning, social isolation, and a global pandemic outside, adding more to my plate seemed like a terrible idea at first.

Especially that many of us resort to staying in our comfort zones in stressful situations. However, by stepping forward, taking the chance I'm grateful I had, and joining the society, I realized that by pushing yourself in unfamiliar places, you venture out just to see what you have been capable of achieving all along, increasing your confidence and inner strength, and magnifying your self-worth.

I encourage you to take the risk and go for the things you wouldn't normally do.

And always remember, sometimes you win, sometimes you learn!



Yasmine Yaser



Omar Hashem

Success is the achievement of personal goals. Every person, no matter their age, sets personal goals to be achieved. Our goals can be short term such as making a good grade on a test or long term such as becoming a pharmacist when he or she reaches life adult. When a person achieves a goal they receive a sense of satisfaction and pride for that achievement which makes them **feel successful**. Any success begins with this effort. If we don't try to fulfil our desires then we will not achieve success in our life.

Success is the goal of everyone's life. Working hard and dedicating these two are the only mantra of success. Anyone can't achieve anything in his life without enthusiasm and success. **Hard work is the key to success.** This is a famous saying. Inspiration is so important to promote us to work hard. So that we can achieve success in every field in our life. Luck plays a positive role. But all of us should **work hard in our life**.

If we live on the fate of luck, we will never succeed in life. **To succeed in our life** we have to go through 5 paths. Like needs and dreams, motives, plans, beliefs, actions, etc.

You must discover what you enjoy. That holds true for both your work and your love Life. Work will occupy a significant portion of your life, and the only way to be fully fulfilled is to accomplish work that you believe is excellent. And loving what you do is the only way to produce outstanding work.

Keep looking if you haven't discovered it yet. Don't be satisfied with second best. You'll know when you're ready and **always remember** Every mistake can be used to your advantage. Because every event, encounter, and especially your mistakes are there to teach you and **force you to grow** into the person you are meant to be. Then figure out what the next best step is. And the key to success in life is to cultivate an internal moral code.



Omar Ashraf



Suzan Murad

The happiest people don't have everything they just make the best of everything". Since my first year in the university, I wanted to be part of the Scientific Society, but I got overwhelmed with all the courses and studies that I did not get a break that allowed me to go for it.

Days and years went by, and I saw how crucial the role of scientific society is for the College of Pharmacy. It is the spirit that brings the college to life through the extracurricular activities it organizes. Thus, in my last year I finally decided that **I wanted to leave my mark in the college** one last time before graduating and decided to become part of the scientific society.

I was scared at first because I was graduating, and I already had a lot on my plate. **Balancing** between the various aspects of being a university student is very challenging. Time management is the key to get the best experience out of the university life. **You can get the high grades** you want as well as have the social life that we all aim to have without compromising one to get the other.

Studying should be your number one priority but not your only priority. Having a social life is equally as important. You should enjoy every single opportunity you have to participate in every event and conference because these are the activities that will shape and carve your personality which is also an essential part of the college experience. At the end of the 5 years in the university you will **leave with the memories you made and the experiences** you gained. Studying should be your number one priority but not your only priority



محمد ناصح

كلية الصيدلة كانت حلمي منذ بداية الثانوية , لقد قرأت عن التخصص وأحببتها أكثر فأكثر وتعلقت بها منذ اليوم الأول وحتى سنتي الرابعة, من حيث المواد وشغف الدراسة وإسميا المختبرات ودراستها لا تتمحور حول الأحياء والكيمياء فندرس فيها شتى أنواع العلوم مما زادني عشقا لهذه الكلية!

وقد قررت الالتحاق بالجمعية العلمية لأن الدراسة وحدها لا تكفي فتواصل الطلاب مع أساتذتنا لبنيني جسرا وكأننا عائلة واحدة وهذه الغاية من الجمعية , وبالرغم من ظروف الجائحة فقد استطعنا استمرار المحاضرات التعليمية دون توقف متحدين بعدنا عن الحرم الجامعي.

Entering the society was a decision I **made to improve my social**, leadership and teamwork skills. My creativity was boosted since I joined and I learned to make **maximum efforts with minimum tools during COVID**.



Alaa Yasir



Abdullatif AL Sabbagh

We have been through a very long journey and we are now stepping on its final crossroad, some of us has set in a specific road, others have it already set from the start, some might drop, but whatever happens it's our decisions that had lead us to this exact point, where we have lived and laughed, I am proud for being part of all of this.

It is the journey that makes it worth putting everything you can offer and what we gain from this is no less than something we will always treasure in our hearts as unforgettable memories

College News



Prof. Mohammed Harb Semreen



Dr. Sameh Soliman



Dr. Rania Harati



Dr. Mohammed Haider

AWARD WINNERS
UOS ANNUAL FACULTY INCENTIVE
AWARD ACADEMIC YEAR 2020/2021

Congratulations!

Prof. Mohammad Harb
Dr. Rania Harati
Dr. Mohamed Aly Haider
Dr. Sameh Soliman
Student-Rawan Mouafak Sbenati

You are an inspiration to us all. Keep up the great work!

Dean, College of Pharmacy

PICTURES By Students

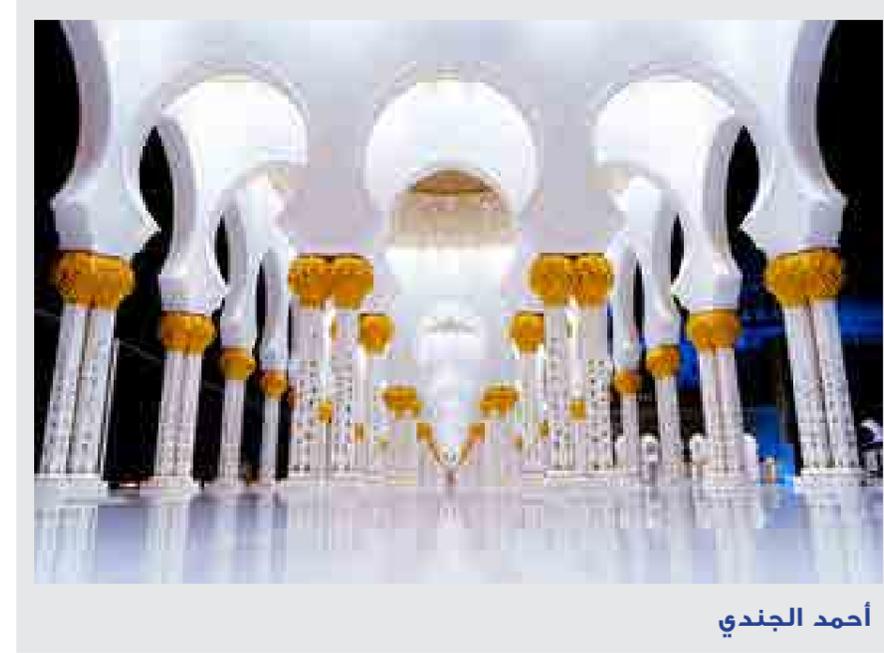
صور بعدسة الطلاب



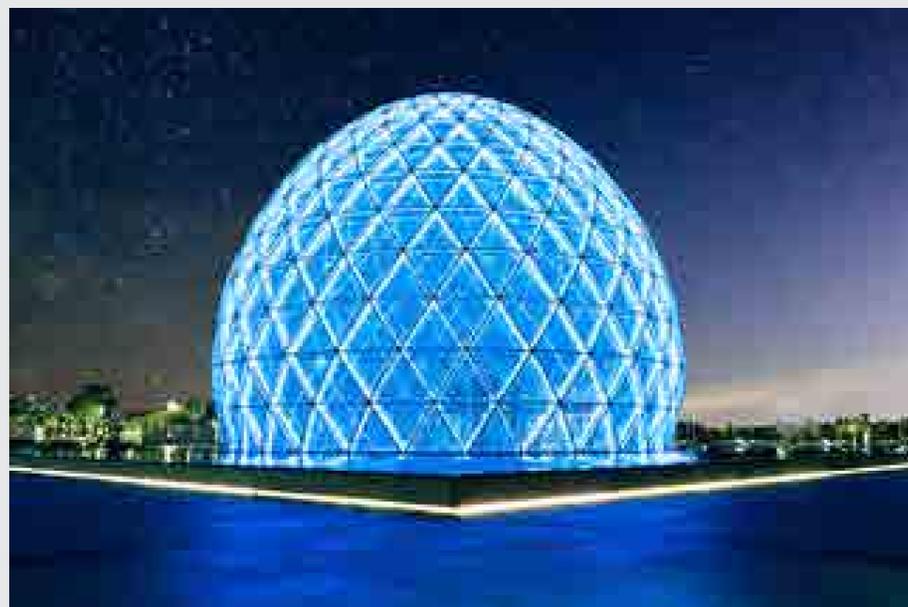
لجين سمير



غاية سعيد



أحمد الجندي



أحمد الجندي



غاية سعيد



أحمد الجندي

كلمة الخريجين

الخريجة ريف الهريش:

تحية تملؤها سعادة يعجز اللسان عن وصفها والقلم عن ترجمتها، خمس سنين مرت تحمل معها التعب والسهر، تحقق حلماً لأن تصبح وسيلة يصل إليها كل فُحْتَاج، ممن أصابته جائحة متألماً طالباً العون في تسكين آلامه، سفينة الدواء التي تقتاده من بز الألم والخوف إلى الأمان والصحة، خمس سنين مرت في عرين جامعة الشارقة، كلية الصيدلة بكل ما فيها من تفاصيل تعبّر علي مخيّلتنا ما بين جدران المبانى ومقاعد الدراسة بما عليها من نقوشات لذكرى خطتها أناملنا دون أن نشعر بالوقت، لتصبح بما عليها من غبار الزمان ذكرى، تحكي قصة طالبة مروا من هنا.

ضحكات ملأت أصدائها ممرات الكلية وقاعات المحاضرات، فكم من دموع تشاركناها على امتحان اجتيز بصعوبة أو ظروف صعبة مرت على شخص منا فكنا كالبنيان المرصوص والجسد الواحد الذي إذا اشتكى منه عضوا تداعى له سائر الجسد بالسهر والحمى ...

في هذا الموقف وهذه اللحظات الجميلة لا يسعنا إلا أن نحمد الله ونشكره الذي من علينا بجامعة الشارقة ذات الصرح الجميل وقادنا إلى كلية الصيدلة، كلية دواء لكل داء، بمعالمتها و علمها وكوادرها والعاملين فيها ممن لهم فضل في دفعنا نحو سلم النجاح وتحقيق الحلم الكبير على إيصالنا إلى بر الأمان ونقطة النهاية السعيدة، فشكراً لله ولوالدينا الذين كانوا سنداً لا ينكسر، ففي كل خطوة كانوا يريقون أمل لنا.

وعند كل حواف الاستسلام ينتشلونا فنعود أقوى مما سبق، ولا ننسى الفضل والعرفان لأساتذتنا الذين كانوا كنج روي وغذى فنمّا عقولنا بالعلم والمعرفة فأنارت ظلمات الجهل بنور العلم لمستقبل باهر. أساتذتنا الذين كانوا كالشعلات المتوهجة، كلاً منهم كان له بصمته الخاصة في سقلنا، ولو كان العرفان لهم يُخَطُّ بالأقلام لجفت خجلا. فكيف لنا أن ننسى من أحسن إلينا، من حفر فينا العلم، والثقة والشغف الأبدى فما جزاء الإحسان إلا الإحسان.

الخريجة نور القلا:

يلوح لي نور في آخر الرواق يعلمني بانتهاء المشوار، فهل عساي أن أمضي أم هل أني سأشتاق؟ إلى السنين الخمس التي حوت ذكرياتنا وحملت في طياتها ضحكاتنا ودمعاتنا، آمالنا وآلامنا، هذه السنين التي كرسنا لها جهدنا ووقتنا، فكم من ليالٍ سهرنا وكم من روحنا بذلنا، طلباً للعلا وتفانياً في سبيل تحقيق المني.

ها نحن، وقد أوشكنا على إتمام ما بدأناه ورغم العوائق والمطبات نقف صامدين في وجه هذه الجائحة مصريين على الوفاء بالعهد الذي قطعناه على أنفسنا ولوالدينا على أن نكون فخراً لهم وأهلاً لحمل هذه الرتبة العظيمة ولكل من علمنا وكان له الفضل علينا، ستظلون نبعاً للعلم لا ينضب، لأننا أينما كنا، سنزهر من رياضكم ونعطي من ثماركم، ونعدكم أن نحمل الرسالة ونؤدي الأمانة.

وفي نهاية خطابي أتمنى لجميع زملائي وزميلاتي التوفيق والنجاح في حياتهم المستقبلية، فالיום نغلق صفحة ونفتح صفحة جديدة لنسطر فيها النور والأمان والأحلام التي ما زلنا نعمل بجد لتحقيقها.

والحمد لله الذي بنعمته تتم الصالحات والسلام عليكم ورحمة الله وبركاته.



اعداد الطالبة، رامة عمار عيون السود

خاطرة بأنامل صيدلانية

أن تكوني صيدلانية .. ففي ذلك اعتراف خفي بالانتصار. وهو قسم كذلك؛ بأنك ستصبحين أشد صلابة من دلال أبويك وتصرين بقدر إصرارهما على ذات الحلم. الصيدلة هي وشاية مبطنة بأنك أكثر عناداً من سنوات ستراهن على مخزون حياتك الرقيق من الصبر والتحمل.

هي وعد على خجل، بأن تنصفي صديقاتك وقهوتك وكتابك المفضل وهوايتك الأولى رغم مرارة الدراسة وقسوة طريقها؛ هي اعتذار لكل من في حياتك عن فظاظة تعاملك رغم نعومتك. بكلمات أخرى؛ هي نافذة صغيرة تنقلنا إلى عوالم الأدب وتقودنا بخفة في هذا المشوار الطويل. الصيدلة يا صديقتي لا تعترف بنا حين ننام ليلاً، لا يعجبها النوم ليلاً؛ إن أكثر ما يعجبها هو الكد والجد والمثابرة؛ لذلك لا عجب حين تنادينك بأنثى العطاء في وضح النهار. إنك ككل نساء الأرض تفرحين؛ حتى ولو كان فرحك تفانياً ففي ذلك إثبات بأن الفتاة فيك والأم فيك والصبر حليفك.

لا تبخسي نفسك يا صديقتي؛ فأنت إحدى أعمدة العلاج الأنيق في أكثر قطاعات العمل خطورة وحساسية؛ ذلك القطاع الذي مدّ لقلب المستحيل يده. أن تكوني صيدلانية فهذا عمل ليس سهلاً، ولكننا خلقنا لتتحدي الصعاب.

بقلم: رامة عمار عيون السود.





في النهاية..

"المعدل بناء رقم.. احرص عليه
ولكن احرص أيضا على بناء نفسك في هذه الخمس السنوات لأنك ستبني مجتمع بأكمله!"

أود ان أقول لكل طالب:

~تعب الحضور

~تقبل الدراسة التي أصبحت جزء لا يتجزأ من تركيبة يومنا

~سهر الليالي

~و لحظات القلق التي تراودنا طوال الفصل الدراسي

~حفظ عشرات المصطلحات و دراسة مئات الصفحات في وقت مختصر جداً

~حل الكثير من الأسئلة في وقت قياسي

~بذل المجهود للدراسة في ظل ظروف خارجية صعبة جداً

تجاوزك للخلافات العائلية وظروف الحياة القاسية التي في بعض الأحيان تجبرك أحياناً على الانطفاء..

ولكنك رغم كل هذا.. تبذل كل ما بوسعك لتكتمل الدراسة..

~حين يكون المرض ليس عذراً لعدم حضور المحاضرات و القيام بواجبك الدراسي على حد قول أحد الدكاترة في كليتنا ...

كل هذه اللحظات الصعبة التي تجاوزتها بنفسك

وبتشجيع من حولك، لم تمر عبثاً .

فقد صنعت منك شخصاً صلباً قادر على ان يكمل ما بدأ به

ويحقق حلماً كان بالأمر مجرد فكره !

صنعت شخص قوي يتصدى للحياة وينافس تجاربها

لن ينسى الله كل لحظات خوفك، احباطك، او حتى تعثرك..

سيرزقك ويجبرك ويجعلك ما تتمنى يوماً

تذكر ذلك جيداً 🌟

متيقنة ان مستقبلنا في جامعة الشارقة زاهر جداً

وسوف ننال أكبر مما نحلم به ❤️

وفي الختام؛ كلماتي هذه ماهي الا محاولة تشجيع غيري من الطلبة او حتى تشجيع أي قارئ

بأنك لست وحدك والحياة بتعقيداتها كفيhle بأن تجعلنا أكثر وعي و أكثر تصدي لها

بروحنا الجميلة وكلماتنا اللطيفة.. كفيhle ان تصنع يوم أي شخص عابر نقابله 🌟

انتهى..

بقلم الخريجة

طالبة كلية الصيدلة

Sara.ma818@hotmail.com

ساره محمد الملا

قصة كفاح

اشعر ان قصتي ممكن ان تكون اعتيادية ولكنها محط الهام الكثيرون
خصوصاً الطلاب السنة الاولى المقدمين على الغربية ورحله كلية الصيدلة
بشكل عام

قصتي باختصار؛ فتاة مذيعة في البرنامج الإذاعي بالمدرسة ، حصلت على جوائز
عديده ، تلاوة القرآن في الإذاعة ، تقديم حفلات المدرسة ، تخرجت بمعدل عالي جداً
يؤهلني لدخول كلية الطب وفعلاً حصلت على القبول ولكني اخترت الصيدلة
في جامعة الشارقة ❤️

البدايات جميلة ولكنها كانت بين مرض والدتي وبعدي عن بيتي واهلي لأول مره
جعلت مني شخص غير قادر على التركيز.. فقدت السيطرة على حسي الدراسي وعلى
شخصي بشكل عام ، دخلت المجال وإذا بي انحدر من منحدر عالي جداً وفجأة
انذار قنصليه ب فرصة اخيره وإلا سيكون الطرد من البعثة ومن الجامعة هو الحل.

الى ان رأيت ظلام أعجز عن ازالته، ما الذي سوف يحدث ليزيل عني ذلك؟،
صمت طوال الطريق ومشاعر متبلده عند رؤية الاحباب،

الى ان نصدم بذلك الخبر.. موت أحد اقاربي.. موت ولكنه يعيد الحياة الى مجاريها..
عند الصدمات تتغير طريقة التفكير كامله، لتكتشف طرق حياة جديده..

٣ ايام تفصلني عن الامتحانات النهائية

والتي سوف تنقل حياتي الى تغيير مجرى الدراسة وتغيير تخصصي الجامعي ،
ولكني لم أصر على شيء أكثر من أني أكمل في كلية الصيدلة.. ارى انه حلمي ولكنه
بعيد المنال وليس من السهل الحصول عليه حيث إنني أقف على حافة المنحدر الان،
مالم اجتاز هذه الامتحانات،

اخترت السير في الطريق الوعر بدلاً من ان اغيره، بذلت ما بوسعي في هذه
الامتحانات، اظن انني اخرجت طاقتي السلبية كلها في الدراسة

واغمضت عيني عن كل ظروف الحياة والظروف العائلية في وقت الدراسة،
"لا بد ان تشغل عقلك حتى لا يشغلك هو بالأفكار"

حصلت على الامتياز في جميع المواد وتم رفع الانذار وتم اكمال برنامج الصيدلة
بحمد الله

ارى انني الان متميزة في المواد الدراسية

و درجاتي والله الحمد في صعود واستقرار

ولم تتبقى لي سوى السنة الأخيرة في الكلية ❤️

أصبحت هذه القصة بداية جميلة لمستقبل أجمل

" لا بد من الفشل للوصول الى طريق النجاح.. "

صيدلة جامعة الشارقة تحتفل بيوم الصيدلة العالمي



احتفلت كلية الصيدلة في جامعة الشارقة بيوم الصيدلة العالمي، والذي أقيم بمجمع الكليات الطبية والعلوم الصحية مع تطبيق كافة الإجراءات والتدابير الاحترازية للوقاية من الوباء الفيروسي (كوفيد - ١٩)، بهدف تعزيز الدور الحاسم للصيدلة في حماية سلامة المرضى من خلال تحسين استخدام وترشيد استهلاك الأدوية والحد من الأخطاء الدوائية.

تضمن الحفل العديد من الأنشطة والفعاليات والندوات العلمية المتنوعة، بجانب الاحتفال بارتداء الرداء الأبيض لطلاب السنة الأولى المنتسبين لكلية الصيدلة، ومعرض المصنوعات العلمية، ومشاركة عدد من المستشفيات والصيدليات والشركات العاملة في مجال تقديم الرعاية الصحية، بالإضافة إلى تقديم عدد من المحاضرات الإرشادية للطلبة، وعرض فيديو عن مشاركة طلبة كلية الصيدلة في المؤتمر العالمي للصيدلة والطب.

خلال الاحتفال، رحب الأستاذ الدكتور قتيبة حميد، نائب مدير الجامعة لشؤون الكليات الطبية والعلوم الصحية وعميد كلية الطب بالحضور والطلبة الجدد، وبارك للطلبة انتمائهم لكلية الصيدلة، وحثهم أن يجعلوا العلم والمعرفة المبنية على البحث العلمي التطبيقي أسلوب حياتهم خلال دراستهم الجامعية، وأكد أن جامعة الشارقة تبذل أقصى الجهد لتوفير البيئة التعليمية المتميزة، من خلال استراتيجية تعليمية مبتكرة لتخريج جيل من مقدمي الخدمات الصحية يملكون المهارات والمعارف بهدف إحداث فروقات إيجابية في مجتمعاتهم.

من جانبه الأستاذ الدكتور كارم الزعبي، عميد كلية الصيدلة، قدم الشكر إلى إدارة الجامعة على دعمها لجميع أنشطة الطلبة، وأكد أن كلية الصيدلة تقدم خدمة تعليمية متميزة من خلال استراتيجية تعليمية حديثة ومبتكرة، وأضاف أن الكلية تطرح برامج أكاديمية معتمدة محليا وتسعى لاعتمادها دوليا خلال الفترة المقبلة، كما وأكد أن الهدف من الاحتفال هو التعريف بمهنة الصيدلة من خلال تسليط الضوء على دور الصيدلي في التوعية الصحية وتقديم الخدمة والرعاية الصحية على أعلى مستوى، بجانب تعزيز مفهوم السلامة الدوائية والرقي بمستوى البحث العلمي وتطوير الدواء.

معرض الكتاب 2020

جامعة الشارقة تحتفل باليوم الوطني الـ 49 افتراضياً

المطالب العصرية والحضارية ضمن أرفع مقاييسها ليس لهذا الوطن فحسب بل ولكثير من أقطار الوطن العربي ودول المنطقة الإقليمية وحتى بعض الدول العالمية».

شارك بالحفل افتراضياً أعضاء الهيئات الأكاديمية والإدارية والفنية بالمقر الرئيس لجامعة الشارقة وفروعها بمدن الإمارة المختلفة، وتضمن الحفل مجموعة من العروض المرئية ومنها: فيلم قصير تحت عنوان « زايد في القلب » أنتجته طالبتان من كلية الاتصال والذي حاز علي إعجاب الحضور، مما دفع سعادة مدير الجامعة لتخصيص مكافأة تشجيعية لهما، تلا ذلك فيديو قصير اشتمل على تهنئة نواب المدير وعمداء الكليات والمسؤولين في فروع الجامعة بالمناسبة، تبعه مجموعة أفلام قصيرة لعرض مشاركات أفرع الجامعة، ثم فيديو عن مبادرات طلبة الجامعة خلال جائحة كوفيد-19، ثم شاهد الحضور المعرض الفني الافتراضي والذي قدمه المرسم الجامعي بعمادة شؤون الطلاب، ثم أنشودة في حب الوطن قدمها الطالب سلطان السامرائي، وانتهى الحفل بسحب على هدايا وجوائز قيمة لكافة المشاركين.

وتعبيراً عن مشاركة طلاب كلية الصيدلة نظم طلاب الجمعية العلمية حفلاً قصيراً احتفالاً بهذه المناسبة العظيمة على قلوب الجميع عبر منصة مايكروسوفت تيمز تضمن الحفل عدد من الفقرات والفعاليات وتم عرض فيديو قصير بعنوان شكر يا وطن ساهم في إعداده مجموعة متميزة من طلاب وطالبات كلية الصيدلة تحت إشراف أعضاء الهيئة التدريسية في الكلية وتحت إشراف الجمعية العلمية لطلبة كلية الصيدلة.



احتفلت جامعة الشارقة وفروعها باليوم الوطني الـ 49 لدولة الإمارات العربية المتحدة، وذلك عبر تقنية الفيديو، بحضور الدكتور حميد مجول النعيمي مدير جامعة الشارقة ونوابه، وعمداء الكليات، وأعضاء الهيئات الأكاديمية والإدارية والفنية، وجميع العاملين بالجامعة.



العاملين بالجامعة.

بدأت مراسم الاحتفال بعزف السلام الوطني للدولة، ثم ألقى مدير الجامعة كلمة رفع خلالها أسمى معاني التهنية والتبريكات إلى مقام صاحب السمو الشيخ خليفة بن زايد آل نهيان رئيس الدولة، حفظه الله، وإلى أخيه صاحب السمو الشيخ الدكتور سلطان بن محمد القاسمي عضو المجلس الأعلى حاكم الشارقة ورئيس جامعة الشارقة وإلى إخوانهما أصحاب السمو الشيوخ أعضاء المجلس الأعلى للاتحاد حكام الإمارات وأولياء عهدهم ونوابهم (حفظهم الله تعالى جميعاً وراعاهم) وذلك بمناسبة الذكرى التاسعة والأربعين لقيام اتحاد دولة الإمارات العربية، كما أقدم هذه التهاني والتبريكات إلى أعضاء الحكومات الاتحادية والمحلية للدولة وإماراتها، ولشعب هذا الوطن الغالي والعزیز وجميع المقيمين على ثراه الطيب الأمين، راجياً من الله الرحمن الرحيم أن يتغمد روح المغفور له الشيخ زايد بن سلطان آل نهيان المؤسس الأول لدولة الاتحاد وإخوانه الذين انتقلوا إلى جوار ربهم، بواسع رحمته وأن يسكنهم جميعاً جنات الخلد والنعيم مع الأبرار والأطهار والصالحين.

وأضاف مدير الجامعة قائلاً: تتعاضد الفرحة بذكرى قيام دولة الاتحاد عاماً بعد عام لدى جميع من عاش تحت رايات هذه الذكرى، حيث تعالت وترسخت الأركان التي قام عليها هذا الاتحاد خلال هذه السنوات إلى أن بلغت حداً على قدر كبير من الأهمية على المستوى العالمي حضارياً وعصرياً، فضلاً عن المكانة الإقليمية والقومية الكبرى التي تحققت خلال هذه السنوات، فالقائمون على التنمية الوطنية باتحاد دولة الإمارات العربية، لا يعملون فقط على تلبية متطلبات العيش المستقر لمجتمع هذا الوطن الغالي والعزیز بل يعملون أيضاً على المنافسة العالمية وبقوة وجدارة للفوز بالمراكز الأمامية الأولى في كثير من ميادين التقدم والتطور والرقى لتحقيق

رسالة صاحب السمو
الشيخ الدكتور سلطان بن محمد القاسمي
عضو المجلس الأعلى للاتحاد حاكم الشارقة ورئيس جامعة الشارقة، حفظه الله

«نحن في الشارقة نقراً، نريد المجتمع القارئ، وندعو إلى تعميق عادات القراءة بين فئات الأبناء، بل وإلى توفير الكتب المناسبة للرجال والشباب وللمرأة.. كتب للجميع ولهم فيها منافع. بهذا الفهم تكون واحات الكتب واحات نور لا بد من تنميتها وتطويرها... وفي مجالاتها ومساحاتها فليتنافس المتنافسون»



ولا شك في أن تعاون الجمهور وتفهمه للظروف الاستثنائية التي تحيط بالدورة الحالية من بين الشروط اللازمة لتحقيق الأهداف المتوخاة من هذه الإجراءات، وهي حماية الجمهور والمجتمع بأسره من خطر كورونا، وفي الوقت ذاته مواصلة أداء الرسالة التي اضطلع بها معرض الشارقة الدولي للكتاب، بإخلاص واقتدار مشهودين، منذ نحو أربعة عقود وقد عبر الطلاب عن سعادتهم بهذه الرحلة التي تنظم في كل عام إذ أنها تحفز الطلاب من عشاق القراءة على تنمية وتوسيع مداركهم وأفاقهم في شتى المجالات العلمية والثقافية وتساعدهم في اقتناء الكتب المتميزة والقيمة.

وقد سرت أعضاء الجمعية وجود مطبوعات تتحدث عن علوم الصيدلة مما ساعد الطلبة المقبلين على التخصص واختصاصهم بالحصول على لمحة عامة وفكرة أفضل عما تتمحور حوله الكلية، وساهم الأعضاء أيضاً بتنظيم المعارض والتحقق من توفرها لكل من أراد اقتنائها، وفي ختام الزيارة تم التقاط صور تذكارية توثق رحلة الأعضاء والعمل المذهل والمنظم الذي ساهم فيه كل من شارك في المعرض.

يعتبر معرض كتاب الشارقة معرضاً سنوياً يتم تنظيمه من قبل هيئة الشارقة للكتاب، وبعد ثالث أكبر معرض للكتاب في العالم، فضلاً عن كونه المقصد الأول للباحثين عن مختلف أنواع الكتب، كما يشارك في المعرض مجموعة من الأديباء والكتاب وغيرهم من الفنانين القادمين من مختلف أنحاء العالم، لذا لن تحصل على فرصة شراء أفضل الكتب العالمية والمحلية فحسب، بل من الممكن أن تلتقي بمؤلف الكتاب أيضاً! وفي دورته الجديدة لعامه الثامن والثلاثون، التي تستمر 11 يوماً، وأصل المعرض عرض الكتب، وتقديم ورشات العمل التدريبية والأمسيات الشعرية وحفلات توقيع الكتب و بمناسبة انطلاق معرض الشارقة الدولي للكتاب في دورته الجديدة لهذا العام نظمت الجمعية العلمية لكلية الصيدلة بجامعة الشارقة رحلة علمية ثقافية للطلاب تحت إشراف الدكتورة منال الشعراوي رئيسة اللجنة العلمية لطلاب كلية الصيدلة، حيث مثلت هذه الزيارة فرصة جيدة للطلاب لتعميق معرفتهم واستكشاف عالم الثقافة والإبداع في شتى المجالات، وأتاح الفرصة لهم للتعرف على دور النشر المختلفة والأنشطة الثقافية المتنوعة، كما وشاركت كلية الصيدلة بتوزيع مائة نسخة من أعداد المجلة العلمية لكلية الصيدلة العدد العاشر والحادي عشر من خلال جناح جامعة الشارقة.

وقد كرس منظمو المعرض جهودهم للحفاظ على سلامة زوار المعرض من خطر «كوفيد-19»، عبر عدد من الإجراءات الاحترازية والقواعد التنظيمية التي تضمن تطبيق تعليمات الوقاية وقواعد التباعد الاجتماعي، وتوفر بدائل لمتابعة الفعاليات والمشاركة فيها بالحوار والرأي عبر تقنيات الاتصال عن بعد.

مشاركة طلبة كلية الصيدلة في جامعة الشارقة في مؤتمر ومعرض دبي الدولي للصيدلة "دوفات" 2021



فرضها الوباء تم تنظيم جميع جلسات مؤتمر ومعرض «دوفات 2021» افتراضياً وقد حصلت الطالبتان منزه أحمد وجريس داوود من جامعة الشارقة على المركز الخامس لأفضل تقديم ملصق علمي لبحث بعنوان

“New Insights into the Therapeutic Applications of CRISPR-Cas9 Genome Editing in Breast Cancer”



تحت إشراف د. رانيا حارتي مساعدة بروفييسور قسم علم الأدوية الشرير في جامعة الشارقة . يهدف الملصق إلى تقييم كريسبر كأداة للتعديل الجيني، تتميز بامتلاكها إمكانيات واعدة لعلاج العديد من الأمراض في المستقبل، وقد اختصت الطالبتان هنا بمناقشة علاج سرطان الثدي الذي ينتج بسبب خلل في الجينات، عن طريق تقنية كريسبر CRISPR. كوسيلة لتحقيق شفاء جذري، بدلاً من علاج الأعراض فقط.

ضمن مشاركة كلية الصيدلة بالجامعة في معرض ومؤتمر دبي الدولي للصيدلة والتكنولوجيا 26 «دوفات» للسنة الخامسة عشر على التوالي، والذي يقام تحت رعاية الشيخ حمدان بن راشد آل مكتوم، نائب حاكم دبي وزير المالية رئيس هيئة صحة دبي، خلال الفترة من 05 إلى 07 إبريل 2021 في مركز دبي الدولي للمؤتمرات والمعارض.

يعدّ مؤتمر ومعرض دبي الدولي للصيدلة والتكنولوجيا (دوفات) معرض الصيدلة احد أكثر المؤتمرات أهمية في منطقة الشرق الأوسط وشمال أفريقيا. ويجتذب الحدث رواد الصيدلة على مستوى العالم، وتنظم العديد من المحاضرات



وورش العمل، وتبادل الخبرات مع المختصين في المجال الصيدلاني وفرصة متميزة للباحثين والعاملين في الرعاية الصحية والمحترفين والأوساط الأكاديمية لتبادل الخبرات إضافة إلى الاطلاع على آخر ما توصلت إليه الأبحاث والتقنيات الذكية في هذا المجال، وتماشياً مع الظروف المستجدة التي

برنامج "ساند" خيركم خيركم لغيره

نظمت كلية الصيدلة في جامعة الشارقة بالتعاون مع مؤسسة الإمارات برنامج «ساند» خلال الفترة ٠٧ أكتوبر ولغاية ٠٥ ديسمبر بنظام ورشة عمل أسبوعياً والذي تم طرحه عبر منصة ميكروسوفت تيمز و ضم جميع طلبة الكليات الطبية والصحية في الجامعة.



يعد «ساند» أول برنامج وطني تطوعي للاستجابة لحالات الطوارئ في دولة الإمارات العربية المتحدة، ويضم مجموعة من الأفراد المؤهلين لتدريب الأفراد للتعامل مع حالات الطوارئ. ويهدف البرنامج إلى تدريب المتطوعين على الاستعداد الأساسي لمختلف حالات الطوارئ.

تم تقديم دورة الاعداد على مدى اثنى عشر يوماً متفرقا وشملت ثلاث برامج هي «مهارات القيادة» و «حل المشكلات واتخاذ القرارات» و «البروتوكول والأداب». تضمنت الدورة تقديم أليات تدريبية لتعليم المتطوعين على كيفية البقاء في حالة التأهب في اوقات الطوارئ، والمهارات القيادية المطلوبة في تلك الاوقات. عمل المدربون في البداية على إعطاء التدريبات العملية والمحاكاة لكيفية بناء الفريق وأساليب القيادة المتقدمة والصفات التي يجب ان يتحلى بها القائد وأعضاء فريقه أثناء الخطر، ومن ثم كيفية التصرف عند إدارة الحوادث من حيث الوصول للموقع، عمليات البحث والإنقاذ، إلى جانب الفرز والتصنيف ليتم اسعاف الجرحى سريعاً تبعاً لخطورة حالة كل منهم. كما تم عرض أحدث وأهم الاستراتيجيات لحل المشكلات وكيفية تحليل المشكلة واتخاذ القرارات بشأنها.

كما رافقت الدورة عدة فعاليات بالاشتراك مع المتطوعين لتدريبهم على التفكير ووضع حلول معقولة للمشكلات، إلى جانب تعريفهم بالعمليات الطبية والسلامة في إخماد الحرائق وتقديم الإسعافات الأولية والإنعاش القلبي الرئوي.



مؤسسة الإمارات
EMIRATES FOUNDATION

يوم حوار الطلبة الجدد 2020

راما عيون السود

ومن ثم كان هناك مشاركة مميزة تناولت الحياة الجامعية وما بعد تخرج من الزميلة روزان مرعي التي كانت يوماً من طلبة كلية الصيدلة في جامعة الشارقة، كما شارك الخريج المتميز عمرو الشرييني بتجربته عن كيفية تنظيم الوقت وألية الدراسة الجامعية، ومن ثم قامت الطالبتان مونا و ريماس من السنة الرابعة بتفسير الخطة المعتمدة لكلية الصيدلة والاستراتيجيات التعليمية المبتكرة لتخريج أفضل الصيادلة الذين يتمتعون بأعلى مراتب الخبرة والعلم الأكاديمي والإكلينيكي، وكيف أن علم الصيدلة ينقسم لثلاثة أقسام.

نظمت كلية الصيدلة في جامعة الشارقة جلسة حوارية افتراضية مفتوحة عبر منصة مايكروسوفت تيمز يوم الثاني عشر من شهر سبتمبر ٢٠٢٠، جمعت عميد الكلية الأستاذ الدكتور رأفت العوضي بطلبة الجدد التي أضاء من خلالها في نفوس الطلبة فكرة أن من يريد النجاح لابد أن يعبر إليه عبر جسر من (ألم الانضباط والالتزام البسيط) وهو ألم خفيف ووقته جداً قصير و النتيجة سعادة و نجاح عظيمين.

تزينت الجلسة الحوارية بحضور عدد من الهيئة التدريسية في كلية الصيدلة، ابتدأت الجلسة بكلمة تحفيزية من الأستاذ الدكتور قتيبة حميد، نائب مدير الجامعة لشؤون الكليات الطبية والعلوم الصحية، حث فيها الطلبة على المثابرة في دراستهم والمستقبل المشرق الذي يمكنهم الوصول اليه من خلال ذلك. ومن ثم تعرف العميد الأستاذ الدكتور رأفت العوضي على طلبة السنة الأولى عن قرب و حرص على غرس فكرة أنه ليس هناك حدود لما يستطيع الطالب القيام به، فحيث توجد رغبة قوية توجد طريقة للنجاح والتميز دوماً.

كما قام الدكتور سامح سليمان، الأستاذ المساعد في كلية الصيدلة، بتعريف الطلبة على آلية وصولهم للمسابقات و تحميل المحاضرات عن طريق حساباتهم الإلكترونية و كيفية تواصلهم مع الطاقم التدريسي و الاستفادة من المكتبة الإلكترونية. كما ذكرهم بضرورة الاعتناء بتغذية العقول عن طريق قراءة الكتب النافعة والمقالات المفيدة والاستماع إلى البرامج التي ترتقي بالمعنويات و تسمو بالنفس.



القسم الأول قسم الصيدلة والتكنولوجيا الصيدلانية الذي يهتم بتحضير وتطوير المستحضرات الصيدلانية في المختبرات و كيفية السعي الدائم نحو الحصول على أقصى أثر علاجي للدواء مع الوصول للحد الأدنى للأثار الجانبية. أما القسم الثاني فهو قسم الكيمياء الطبية، وكيف أن الكيمياء الصيدلانية تجمع بين الكيمياء والصيدلة من أجل تصميم مركبات دوائية جديدة و تطوير مركبات كيميائية لتناسب مع الاستخدامات العلاجية المختلفة. أما القسم الثالث فهو قسم الممارسة الصيدلانية والعلاجية الطبية حيث يقوم الصيدلاني بتقديم الرعاية الطبية للمرضى داخل المستشفيات والعيادات لمساعدتهم على الشفاء و منع الأمراض وذلك بالتأكد من إعطاء المريض الدواء بالجرعة و الشكل المناسبين.

وتم اختتام الحفل من قبل الأستاذ الدكتور رأفت العوضي بضرورة التركيز على الهدف إذ شبه الحياة بلا هدف كسفينة بلا دفة كلاهما ينتهي به الأمر على الصخور، و ثم قام بالاستماع لأفكار و تساؤلات الطلبة المستجدين. ومن خلال هذه الجلسة الحوارية تمنى ان يتمكن طاقم كلية الصيدلة من إعداد و تجهيز طلبة قادرين على خوض الحياة الجامعية والتفوق والتميز خلال السنوات الخمس القادمة.

اليوم التعريفي للطلبة المستجدين 2021



المسابقات الدراسية و تحميل المحاضرات عن طريق حساباتهم الإلكترونية، وكيفية تواصلهم مع الطاقم التدريسي والاستفادة من المكتبة الإلكترونية التي هي بمثابة كنز من المعرفة لكل طالب و طالبة، ولأن طالب العلم كالطير لا يقدر على التحليق بدون جناحين وأجنحة الطلبة هي عقولهم الكبيرة التي تتسع بالقراءة والتعلم.

ومن ثم قام الدكتور فراس جرجيس، الأستاذ المساعد في قسم الممارسة الصيدلانية والعلاجات الدوائية، بتفسير الخطة الدراسية الجديدة لكلية الصيدلة، مركزاً على الاستراتيجيات التعليمية المبتكرة لتخريج أفضل الصيادلة الذين يتمتعون بأعلى مراتب الخبرة و العلم الأكاديمي والإكلينيكي، كما أوضح أن علم الصيدلة ينقسم لعدة أقسام، مؤكداً على أهمية كل قسم في تقديم العلوم الصيدلانية، والتي تتجمع مع بعضها في هدف تخريج صيادلة اكفاء قادرين على العطاء والابداع في سوق العمل.

واختتم اللقاء في كلمة أشار فيها الأستاذ الدكتور كارم الزعبي على أن مهنة الصيدلي لا تقتصر على بيع الدواء في الصيدلية كما هو شائع بين الكثير، بل أن لها فرص للعمل كثيرة كالعامل في التسويق الدوائي أو العمل في المصانع الدوائية وغيرها الكثير.

وتم الاستماع والاجابة عن تساؤلات الطلبة فيما يخص دراستهم والنشاطات المطلوبة منهم خلال فترة الدراسة، وتفسير كل ما يجول بخاطرهم من أفكار حول الصيدلة والعمل الصيدلاني.

نظمت عمادة كلية الصيدلة في جامعة الشارقة والجمعية العلمية لطلبة كلية الصيدلة في ال 30 من سبتمبر 2021 في قاعة الرازي في مجمع الكليات الطبية والصحية احتفالاً لطلبة السنة الأولى في الكلية وارتدائهم الرداء الأبيض. كما تضمن اليوم عدة فعاليات منها الجلسة الحوارية التي افتتحها الأستاذ الدكتور قتيبة حميد نائب مدير الجامعة لشؤون الكليات الطبية والصحية، والأستاذ الدكتور كارم الزعبي عميد كلية الصيدلة.

وتضمنت الجلسة ترحيباً بالطلبة الجدد والدعوة الي ترسيخ مبدأ زرع حب التعلم والاجتهاد والسعي وراء الأهداف وسبل تحقيقها. تزينت الجلسة بحضور عدد من الهيئة التدريسية والادارية في كلية الصيدلة، وقد عبر الأستاذ الدكتور قتيبة عن عميق فرحه بعودة الطلاب والطالبات إلى رحاب المدينة الجامعية ودعوته بتجاوز الظروف الصعبة التي تزامنت مع جائحة كورونا على مدار العامين الماضيين.



ابتدأت الجلسة بكلمة الأستاذ الدكتور قتيبة حميد قام من خلالها بإعطاء التوجيهات للطلبة الجدد والتي ركز فيها على أهمية إعداد و تجهيز طلبة قادرين على خوض الحياة الجامعية والتفوق والتميز خلال السنوات الخمس القادمة. ومن ثم القى الأستاذ الدكتور كارم الزعبي كلمته الترحيبية بالطلبة الجدد، وركز فيها على أنه ليس ثمة حاجز يعيق ولا قيد يكبل أفكارهم و خططهم للنجاح والتميز.

ثم قام الدكتور سامح سليمان، الأستاذ المشارك في قسم الكيمياء الصيدلانية، بتعريف الطلبة على آلية الوصول الي

خرافات في الثقافة الصحية

إيمان تركي , مثقفة صحية ورئيس قسم البرامج
إدارة التثقيف الصحي بالمجلس الأعلى لشؤون الأسرة , الشارقة

مقدمة :

الخرافة هي الاعتقاد أو الفكر القائم على مجرد تخيلات أو خبرات دون وجود سبب منطقي مبني على العلم والمعرفة. وعادة ما ترتبط الخرافات بعادات توارثتها الشعوب والأجيال إما هو معتقد أو ممارسة. واليوم مع وجود التقنيات الحديثة ووسائل التواصل الاجتماعي وتعدد الثقافات أصبح من السهل تداول وتبادل هذه الخرافات وتصديقها وتطبيقها. لنرى بعض أبرز هذه الخرافات وما هو الواقع العلمي خلفها.



الخرافة الأولى: الشوكولاتة تسبب ظهور حب الشباب.
الحقيقة: التخثيرات الهرمونية المؤثرة على الغدد الدهنية خاصة خلال مرحلة المراهقة وتزايد افرازها يسبب ظهور حب الشباب والمطلوب الاعتدال في كميات تناول الشوكولا وذلك لمحتواها العالي من الدهون المشبعة.



الخرافة الثانية: الشاي الأخضر حارق للدهون ويساعد في فقدان الوزن
الحقيقة: يعتبر الشاي الأخضر غني بمضادات الأكسدة والتي تساعد في تنشيط عملية الأيض أو الحرق بنسبة قليلة أي أن كوب واحد يساعد في حرق ما بين ١٠-٥٠ سعرة حرارية



الخرافة الثالثة: المنتجات العضوية هي الأفضل
الحقيقة: يعرف المنتج العضوي بتلك التي يتم إنتاجها لمعايير عضوية وتعتمد من قبل الجهات الرقابية بحيث لا يسمح باستخدام المبيدات الحشرية والأسمدة الكيميائية أثناء زراعتها وتستخدم أسمدة طبيعية. وبالنسبة في اللحوم فقد تعطى الحيوانات غذاء طبيعياً وتربى في أماكن جيدة دون مضادات حيوية أو هرمونات نمو. لكن لا يوجد دليل علمي على تفوق المنتجات العضوية بالقيمة الغذائية على المنتجات الأخرى العادية. كل ما عليك تنظيفها وغسلها جيداً للتخلص من بقايا المبيد الحشري.



الخرافة الرابعة: الخطوط البيضاء على الأظافر دليل نقص الكالسيوم
الحقيقة: الخطوط البيضاء ناتجة عن تغير في لون الظفر نتيجة إصابة خفيفة أو اصطدام قد نشعر به أو لا نشعر به، وتختفي مع نمو الظفر



الخرافة الخامسة: جهاز المشي الكهربائي يسبب خشونة المفاصل
الحقيقة: المشي بشكل عام رياضة تساعد على الوقاية من الخشونة وتخفيف أعراضها، ولكن عند المشي على الجهاز يجب مراعاة ارتداء حذاء رياضي مخصص للمشي، ولا ينصح برفع مستوى الميلان للجهاز كثيراً لمن يعاني من خشونة الركبة. يمكن للفرد اختيار وسيلة المشي المناسبة له وفقاً لرغبته والأهم من ذلك الاستمرار للحفاظ على صحة العظام والمفاصل.



الخرافة السادسة: المخبوزات السمراء أقل سعرات حرارية من المخبوزات البيضاء
الحقيقة: كلاهما مصنوع من الحبوب مثل القمح، الحنطة أو الشعير، ولكن الفرق أنه في المخبوزات السمراء تطحن الحبوب كاملة مع قشورها مما يرفع من محتواها من الألياف، أما المخبوزات البيضاء تطحن الحبوب بعد إزالة قشورها. ما يعني أن كلاهما متساويين تقريباً في السعرات الحرارية ولكن الفائدة في مستوى الألياف هي تحسين عمليات الجهاز الهضمي وتعطي الجسم شعوراً بالشبع لمدة أطول مما يساعد في تقليل كمية الطعام المتناولة خلال اليوم.



الخرافة السابعة: مشروبات الطاقة تعطيك طاقة
الحقيقة: محتوى مشروبات الطاقة عالي بخليط من المكونات المنبهة والمنشطة وأهمها الكافيين، والتورين وبمستويات عالية جداً مسببة تسارع في ضربات القلب، رعشة، توتر، قلق، أرق واضطراب في النوم، وهذا الارتفاع في مستوى الطاقة يفوق تحمل الجسم ولا يعتبر صحياً وفي بعض الحالات خاصة بين الأطفال والمراهقين ارتبطت حالات وفاة موثقة ناتجة عن اضطراب كهربية القلب، وتشنجات وارتفاع مستوى ضغط الدم.

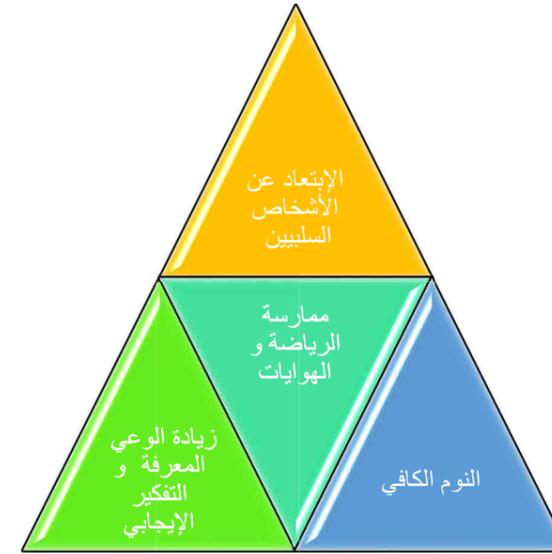
الخلاصة:

حياتنا اليوم مليئة بمثل هذه الخرافات والمعتقدات، لا نكن سبباً في انتشارها بين الأفراد دون التأكد من دقة ما ذكر فيها من قبل ذوي الإختصاص، أجسادنا أمانة لا يجب الاستهانة بالعبث بها بممارسات وسلوكيات قد تكون في بعض الأحيان خطيرة على صحتنا.

هذا الهرم يُلخص يا عزيزي القارئ كل ما تحتاجه للمحافظة على صحتك الذهنية:
الخطوة الأولى: عليك الابتعاد عن الأشخاص السلبيين. تخيل نفسك قطرة ماء وسط محيط كبير. من الصعب أن تكون شخصاً إيجابياً إذا كان محيطك سوداوي. قم بانتقاء أشخاص معينين لتحيط نفسك بهم، أصدقاء تكبر معهم نحو الأفضل، فكما ورد في الحديث الشريف عن أبي هريرة رضي الله عنه: أن النبي ﷺ قال: الرجل على دين خليله، فلينظر أحدكم من يخالل، رواه أبو داود والترمذي بإسناد صحيح.

وهذا أكبر دليل على أنه مهما كانت شخصيتك قوية، كل من تصاحبهم لهم تأثير كبير عليك، لا تستهلك قواك العقلية في التعامل مع أشخاص سلبيين ومضطربين، لأن تواجدهم حول سيُكثّر صفو ذهنك، وغالباً سيعكّر مزاجك. أفكارك ستتدفق كياه مستنقع ضحلة جداً، وسترى الحياة بنظرة سوداوية وتشاؤمية، مما سيقلل عزيمتك ويضعف رغبتك بالوصول.

الخطوة الثانية: وقد وضعتها في قلب الهرم لأنها ستساعدك من إزالة الضغط النفسي، لتعيد شحن طاقتك مرة أخرى بعزيمة أكبر لتحديات أصعب. في قلب الهرم ممارسة الرياضة والهوايات، فأنت يا عزيزي القارئ على دراية تامة أن العقل السليم في الجسم السليم، وفي الحركة بركة، عندما تتحرك وتمارس الرياضة أو حتى المشي الرياضي يبدأ جسدك بإفراز هرمون السعادة، ألا وهو السيروتونين. وبعد انتهائك من التمرين دون اجهاد نفسك، ستشعر بهدوء وسلام داخلي لا يوصف. يطلق على السيروتونين هرمون السعادة لأنه يلعب دوراً كبيراً في ضبط مزاج الإنسان والراحة النفسية، الرياضة تحفز إفراز هذا الهرمون، لذلك يُنصح بممارستها بصورة يومية ليشعر الإنسان بالإتزان الداخلي. ممارسة الهوايات أمر بغاية الأهمية في حياتك اليومية عزيزي القارئ، ولكي لا تفقد تركيزك أو لكي تضع وقت فراغك في شئ ممتع ومريح لك. أنت لست آلة تعمل طوال الوقت، عليك أن تعطى عقلك شيئاً يسليه و يبدع فيه و يريحه من ضغوطات الحياة اليومية، هواية تجعلك لا تفكر في شئ سوى اللحظة التي أنت فيها الآن، كالرسم مثلا و الإبحار بالألوان في خيالك اللا متناهي، أن ترسم ما تشتهي، مع بعض من الموسيقى، قم بتحريك فرشائك كما تشتهي، ففي عالم الرسم لا يوجد قواعد و لا قوانين، لا يوجد حواجز أو قيود، في يدك فرشاة و ألوان و لوحة بيضاء، ارسم فيها ما تشتهي و ما تراه في خيالك، اركض في مجاز خيالك باحثاً عن صورة لترسمها، عبر



عن مشاعرك أو عن ذاتك، ففي عالم الرسم يكمن الهدوء والصفاء الذهني والتركيز العالي، وهذا هو المطلوب. أما إذا كنت شديد القلق والتفكير فأصحك بممارسة السباحة بشكل منتظم، فهي رياضة تساعد الإنسان على العيش في اللحظة وتخفيف التفكير الزائد.

الخطوة الثالثة: النوم الكافي و زيادة الوعي و المعرفة و التفكير الإيجابي، و كلاهما في الأطراف لكي يستند عليهما الهرم، فلولاً هما لسقط الهرم بأكمله. وهذا أكبر دليل على أهمية موقعهم في الإهتمام بصحتك الذهنية. عليك أن تعلم أن النوم هو حجر الأساس، و من دون النوم الكاف ستكون أكثر عرضة للأمراض النفسية والعقلية، يومك يبدأ من نومك. كيف تنام هو أمر في غاية الأهمية، لأنه سيحدد كيف يكون أدائك في اليوم التالي. قلة النوم ستسبب تقلب شديد في المزاج، عدم القدرة على التركيز، صعوبة في التفكير، و ستقل لديك الإنتاجية بشكل ملحوظ. إن كنت تريد أن تقوم بالعديد من الأشياء في يوم واحد، عليك بالنوم الكاف، و ستنهض بنشاط و حماس شديد لعمل أي شئ تريد إتمامه.

زيادة الوعي لديك أمر سيغير حياتك لا محالة، كل ما يكبر الإنسان يزيد وعيه بالأمر، فتتغير أساليبه في التعامل مع مشاكله. لماذا تنتظر حتى تصل لسن معين لتكسب خبرة أوسع في حل مشاكلك، قم بزيادة وعيك في شئون حياتك و مشاكلك الخاصة الآن، من خلال استماعك لتجارب الآخرين الذين مروا بمشاكل مشابهة، حاول أن تفهم المشكلة و تتوغل في جذورها لحلها بالكامل، حاول استيعاب إمكانياتك و قدراتك الخاصة، لتتمكن من معرفة ما تستطيع فعله و ما تعجز عن فعله، عند فهمك لظروفك و جميع إمكانياتك و حجم مشكلتك و مدى تأثيرها عليك، حينها ستكون متمكناً من حل مشاكلك الخاصة بأفضل صورة.



أما بالنسبة للتفكير الإيجابي، فهو بمثابة الوقود الذي يحتاج إليه عقلك، لتتال منه ما ترضى، و لتكون قادراً على إنجاز ما تتمناه حقاً. سترفعك الإيجابية لأعلى، و كل مرة تسقط فيها لن تُحبط بل ستزداد عزماً و شدة، الأمر أشبه بالطعام، مثل ما نأكل طعاماً لنتمكن من العمل بكفاءة، عليك أن تُغذي عقلك بالأفكار التي تزيد من إبداعه، التفكير الإيجابي هو وقود الدماغ الصحي و السليم، أفكارنا هي وقودنا ولها تأثير كبير على حياتنا، فأملاً عقلك بالتفكير الإيجابي ليساعدك أكثر، فالأفكار السلبية تُنَبِّط عمل الدماغ و تدمر الإبداع في ذهن الإنسان و لا نفع لها، فهي لا تجلب لصاحبه سوى الإكتئاب

و الأمراض النفسية، إن كنت تعاني من التفكير السلبي فلا بأس، حاول أن تتدرب على التفكير الإيجابي، فالتفكير السلبي يُعتبر عادة سيئة و يمكنك يا عزيزي القارئ كسرها، حدد يوماً من أيام الأسبوع و من الأفضل أن يكون يوماً خال تماماً من ضغط العمل أو الدراسة، ثم قم بتحدي نفسك و اقطع على نفسك وعداً أن اليوم سيكون يوماً خالياً من السلبية، ستبتعد عن كل شئ يزيد من الأفكار السلبية و تحاول جاهداً عدم التفكير في أي شئ سلبي بالمره، و هكذا ستدرب ذهنك على تخفيف التفكير السلبي و الإكثار من التفكير الإيجابي، أو مثلاً إذا طرأ أمر سيئ أو سلبي لك و قد تزاممت حولك الأفكار السلبية المزعجة، استخدم قاعدة الـ 15 دقيقة، ألا وهي كالتالي: أن تسمح لنفسك بالتفكير في أمر سلبي لمدة 15 دقيقة فقط، ثم بعدها ستتوقف عن التفكير فيه و تقوم بفعل شئ يسعدك كتناول وجبتك المفضلة أو ممارسة رياضة العدو السريع أو المشي الرياضي، و بذلك لن تسلب السلبية من يومك سوى 15 دقيقة فحسب.

عزيزي القارئ كتبت كل هذا لأنني تمنيت لو علمته مسبقاً، تعلمت كل هذا بعد العديد من التجارب المحزنة، و لكن لا بأس فالحياة مدرسة و لازلت أتعلم منها كل يوم. أردت أن ألفت انتباهك للصحة النفسية على وجه الخصوص لأنها أكثر شئ نجهله و نجهل الإهتمام به، و لا يعلمنا إياه أحد في المدارس و الجامعات، صحتك النفسية هي الشئ الوحيد الذي يجب عليك أن تتقن رعايته، لأنك إذا علمت كيف تستخدم عقلك لصالحك و بذلك تستطيع الوصول لكل ما تتمناه، كل ما تحتاجه و ترغب به للوصول لأحلامك موجود بداخل عقلك، فاستثمره و اعنني به جيداً.



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الصحة النفسية

مرحباً عزيزي القارئ، يا ترى كيف حالك؟ هل أنت حزين أم فرح؟ هل تسعى وراء أحلامك؟ أم تركض خائفاً من كوابيس الواقع؟ يا ترى كيف حالك وكيف هي صحتك النفسية؟

قبل كل شيء عزيزي القارئ دعني أشرح لك عن الدماغ، هو العضو المركزي لدى الجهاز العصبي، و أيضاً يبلغ الدماغ قرابة 1300 جرام أي ما يعادل 2% من وزن الإنسان كله و هي نسبة قليلة جداً، ولكن هذه النسبة القليلة كفيلة بجعل حياتك جحيماً أو نعيماً، لك أنت الخيار.

الدماغ يزن 2% من وزن الإنسان، وبالرغم من أنه عضو صغير الحجم، لكنه الأكثر تعقيداً و أكثر عضو يساء استخدامه. عليك أن تعلم يا عزيزي القارئ أن هذا العضو بالذات هو مفتاحك في الحياة و العديد منا لا يعرف كيف يستخدمه، بل البعض منا ينقلب دماغه ضده. قد ذكرت سابقاً أن الدماغ هو أكثر عضو معقد في جسم الإنسان و لكن هذا ليس شيئاً بل بالعكس إنه أمر جيد، دون تعقيد أدمغتنا ما كنا وصلنا القمر و المريخ و غصنا البحار و رسمنا الخرائط و بنينا القصور و الأهرامات، كل ما بيننا حتى الآن في هذا الكوكب هو

من صنعة أدمغتنا المعقدة جداً. لأن تعقيد دماغك، يجعلك أنت ما «أنت» عليه الآن. و لديك يا عزيزي القارئ دماغ بمثابة مكتبة من القدرات و الفوائد غير المكتشفة، أنت تمتلك عالماً كاملاً من المواهب و القدرات داخل دماغك.

الكثير منا لم يقرأ كتاب الإرشادات و يسوي استخدام هذه الأداة المعقدة (الدماغ)، و هذا ما يحدث للعديد منا فنحن في المدرسة تعلمنا كل شيء لا نحتاجه، و لم نتعلم أي شيء نحتاجه. لم يعلمنا أحد كيف نستخدم أدمغتنا لصالحنا، و كيف نخوض في بحر ذاتنا دون أن نغرق، و نعرف من نحن حقاً.

العديد من الناس لا يعرفون عن أنفسهم سوى أسمائهم، كل ما يعرفونه عن أنفسهم هو ما أخبرهم الآخرون به عن أنفسهم. من أنت حقاً؟ هو بحث طويل و ستبدأ باكتشافه بنفسك في مرحلة معينة، و ذلك عندما تبدأ في الضياع داخل ذاتك و تشعر بالشتات و لا تدري ماذا ترغب، حينها ستبدأ بالبحث عن ذاتك و هويتك الحقيقية المستقلة عن ما أخبرك به البعض عن نفسك.

أن يخبرك الآخرون «من أنت؟» هو ليس أسوء ما قد تمر به، بالرغم من أن العديد من الناس قد يخبرك بأشياء ليست فيك و يكذب عليك و يجعلك تصدق أنك حقاً هكذا. مع ذلك من وجهة نظري هناك الأسوء، أسوء شيء قد تمر به حقاً هو أن يخبرك الناس من تصبح و أن يخبروك أن ذاتك الحالية ليست كافية لتكمل مسيرتك في هذه الحياة، مثلاً قد تسمع منهم أنك لست ذكياً كفاية لتدخل هذا المجال، أنت لست سريع الفهم، كأنهم يقولون لك أنت لست كافياً لتصبح ما تريد، و المشكلة إذا صدقت أنهم على حق. قد تصدقهم، و ذلك يا عزيزي ليس خطأك فغالباً ما يكون هؤلاء الأشخاص مقربون إلينا، كأبائنا و أشقائنا و ربما تكون معلمتك المفضلة أو أصدقائك المقربون، فإذا صدقتهم فهذا ليس خطأك أبداً، لأن مكانتهم لها أهمية في حياتك و لأنك لازلت لا تعرف الكثير عن ذاتك، فستثق بالتأكيد بهؤلاء المقربين لديك. سيخبرك الآخرون أنه عليك أن تمتلك هدفاً في حياتك و تفيد المجتمع، و هذا ليس بأمر سيء و لكن ذلك سيضعك في قوقعة و تكون داخل كبسولة. كلما تكبر، كلما تضيق عليك الحياة أكثر لأنك لم تحقق أي شيء مما تريد، و من هنا ستبدأ تنهار شيئاً فشيئاً حتى تسقط تماماً. و من هذه التراهاات التي يطلق عليها البعض «السعي وراء حلمك» أو «بذل مجهوداً أكبر و ستصل بالتأكيد»، ستبدأ صحتك الذهنية بالتدهور تدريجياً حتى تنهار تماماً و قد تمرض أيضاً إذا تأخرت في إسعاف نفسك بالعناية الصحيحة. هذه الأكاذيب التي نسمعها هي التي دفعتنا و دفعت الكثيرين لتدهور صحتهم النفسية. كلنا قد تم التلاعب بأفكارنا و تم إيهامنا أنه علينا أن نكون و نجد هدفاً ما، ثم نعيش حياتنا كلها نحاول تحقيقه و بعدها نموت في سلام. هذه تراهاات التنمية البشرية التي لطالما سمعناها أنا يا عزيزي القارئ، و أتوقع أنك سمعناها أيضاً مثلي. ولكنني أجدت عقلك الآن، هل تؤمن أنك خلقت بعد أن تزوج أسلافك كلهم منذ القدم لينجبوك أنت، من أجل أن تحيا لهدف واحد؟ باللعجب!

إنها حقاً لمضيعة للوقت أن تسعى وراء هدف واحد، لقد خلقت الخالق لتخوض تجربة الحياة و تكتشف و تتعلم من تجاربها، و تعمر الأرض بما تعلمته أنت من تجاربك الخاصة، و من خبرتك طوال هذه السنوات. لم تحيا لكي تسعى وراء حلم واحد، بل نحن هنا لنعمر الأرض بأسرها، و هذا لا يعني أنك عليك أن تضغط نفسك و ترهق عقلك و تتعب روحك بالتفكير لما ستصنعه غداً أو بماذا ستفعل هذا المجتمع؟ يمكنك إعمار الأرض بالإحسان للآخرين، ليس عليك أن تقوم بأشياء أسطورية أو أن تقوم بإنجازات تصل للعالمية، ليس عليك الفوز بجوائز أو الوصول لمنصب عالية، لا يهم إن كنت حائزاً على ألقاب

أو بطولات خيالية. يمكنك بدورك أن تساهم بإعمار هذه الأرض من خلال تحسينك و تطويرك لذاتك أولاً، و ذلك عن طريق الغوص في عمق ذاتك، أتود أن تعرف من أنت حقاً؟ ألا يراودك الفضول في معرفة ذاتك، عليك أن تدخل متاهة دماغك و تسبح داخل فضاء ذهنك، عليك أن تغذي عقلك بالكتب و المعرفة لكي تصل يوماً للطريق الذي خلقت لتمشي فيه. أبحر بعيداً عن شاطئ المألوف و لا تخف فستنتهي الرحلة بعثورك على كنز إبداعاتك، المخبي لك داخل عقلك أنت، أنت تحسب أن وجودك ليس بالأمر المهم و لكن دعني أخبرك يا عزيزي القارئ أن كل واحد منا يؤثر على 1000 شخص في حياته، ثم كل أحد من هؤلاء الـ 1000 سيؤثرون على 1000 آخرين: $1000 \times 1000 = 1,000,000$

أي أن تأثيرك الحقيقي هو واحد في مليون، مما يعني يا عزيزي القارئ أنك أنت وحدك تؤثر على مليون إنسان بصورة مباشرة و غير مباشرة. نعم فيك الكثير من الخير و الكثير من الأجوبة لأسئلة كثيرة طرحت منذ مئات السنين و لم نجب عليها حتى الآن، نعم فيك أنت انطوى العالم الأكبر. قد يلهمنا الله من خلالك العلاج لمرض خطير، أو الحل لأزمة دولية. أحلامنا يمكننا تحقيقها، واقعنا يمكننا تحسينه، إذا تمكنا من عقولنا و تحكمتنا بها، نستطيع حينها استخدام ذكائنا لنشكّل الواقع كما نشاء.

قد تسمع الناس يقولون: «ما كل ما يتمتمى المرء يُدرّكه... تجري الرياح بما لا تشتهي السفن» لإيقانك أنك لن تصل لما تشتهي، و لكن أنا أرى أن هذا البيت هو وصف دقيق للحياة بشكل عام. هذه هي الدنيا مليئة بالتحديات و المفاجئات، ليس لإحباط عزيمتك بل لزيادة حلمك، و لزيادة معرفتك و قوة استيعابك لهذه الحياة.

لا بأس إن كانت الرياح تجري بما لا تشتهي، سنجاري الرياح حتى نبلغ ما هو أفضل مما نشتهي، نحن سنبحر و نبحر حتى نبلغ غايتنا، فإن شاء الله لنا أن نبلغ سنصل حتماً مهما كلف الأمر، سنصمد أمام رياح الحياة حتى نصل إلى ميناء الفرج، فنحن لسنا سفناً مصيرها بيد الرياح بل نحن مخلوقات الله و مصيرنا بيده وحده. لذلك عليك بدماغك، فهو الحل لجميع مشاكلك و هو الجواب لكل أسألتك، و في هذا المقال الذي كتبه أنا سأخبرك بصورة مختصرة كيف تهتم بصحتك الذهنية (النفسية) لأن لها تأثيراً مهولاً على الواقع الذي أنت تعيشه، و إذا تعلمت كيفية الإهتمام بها سوف تطور ذاتك، و تحقق أهدافك و تغدو أفضل كل يوم، و أحسن حالاً من اليوم الذي سبقه.





الأستاذ الدكتور كارم الزعبي
عميد كلية الصيدلة
جامعة الشارقة

مرحباً بكم

عزيزي القارئ

بكل فخر وسرور يسرنا ان نقدم لكم العدد الثاني عشر من مجلة منبر صيدلة الشارقة، والذي يأتي نتيجة للعمل الدؤوب من طلاب كلية الصيدلة تحت دعم وإشراف وجهود أساتذتهم.

لقد تم اختيار مواضيع هذا العدد بعناية فائقة لمعالجة القضايا الصحية الهامة والتي تعني القراء من طلبة، ومقدمي الرعاية الصحية وافراد. تضع أسرة كلية الصيدلة في جامعة الشارقة بين أيديكم هذا العدد ليكون إضافة قيمة لكل مكتبة وتأمل بأن تستمتع خلال قراءتك لهذا الاصدار الشيق.



دعوة للمشاركة

أعضاء هيئة التدريس بهيئة التحرير:

- أ.د. **كارم الزعبي**، أستاذ وعميد كلية الصيدلة مشرف هيئة تحرير منتدى الشارقة للصيدلة.
- **الدكتورة منال الشعراوي**، رئيس لجنة الجمعية العلمية الطلابية - محاضر الصيدلة. قسم الممارسة والعلاج الدوائي - منسق هيئة تحرير منتدى الشارقة الصيدلي.
- **الدكتور سامح سليمان**، الأستاذ المساعد بقسم الكيمياء الطبية عضو منتدى الشارقة الصيدلي مجلس التحرير.
- **الدكتور فراس جرجس**، الأستاذ المساعد بقسم الممارسات الصيدلانية والمعالجة الدوائية عضو هيئة تحرير ملتقى الشارقة الصيدلاني.
- **نور رأفت معروف** - طالبة.

تدعو مجلة منبر صيدلة الشارقة جميع الصيادلة والمختصين والطلبة للمساهمة في نشر مقالاتهم ومساهماتهم العلمية على صفحات المجلة، والتي ستكون بمثابة خطوة في نشر الكلمة العلمية والمعلومة الصيدلانية والصحية، لتكون شعلة أخرى في مسيرة العمل الصيدلاني. اننا كهيئة تحرير في المجلة، اذ نأمل ان تساهموا معنا في تطوير العمل الصيدلاني من خلال آرائكم وملاحظاتكم ومساهماتكم في محاولة لزيادة المعرفة الصيدلانية، وازافة كل ما هو جديد في سبيل الوصول الى غاية ايصال المعلومة الى من يبحث عنها.

نشكر جميع من ساهم معنا، ونأمل أن يزيد عدد المشاركين في المستقبل مع امنياتنا للجميع بالتوفيق والنجاح المقالات والأبحاث الواردة في مجلة « منبر صيدلة الشارقة » تعبر عن رأي كاتبها ولا تعبر بالضرورة عن رأي هيئة التحرير.

الشروط:

- محتوى المواضيع يجب أن يكون على نمط المواضيع المقدمة في (منبر صيدلة الشارقة).
- يجب أن تكون المواضيع من جهد الكاتب الشخصي.
- الموضوع المقدم يجب أن يكون بحجم صفحتين.
- Times New Roman نوع الخط.
- حجم الخط 12-14
- تحرير الموضوع وتصميم صفحاته يتم عن طريق هيئة تحرير (منبر صيدلة الشارقة).

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النفسية**

دوفات 2021

**صيدلة جامعة الشارقة
تحتفل بيوم الصيدلة
العالمي**

كلمة الخريجين