



# MED-ERROR BULLETIN

Strives to promulgate preventable medication errors amongst healthcare professionals



Brought to you by Pharmacy Department, HCTM  
Volume 7, September 2022

## WRONG ROUTE OF ADMINISTRATION

### POTASSIUM CHLORIDE INJ



79yo, male with hypokalemia.



- Patient is having low potassium level, 2.4 mmol/l and was given 2g IV KCL in 100ml NS run over 1 hour via **peripheral** line. (Total 26.82mmol).
- Patient suffered from extravasation and local pain.

Note: 1g KCL: 13.41mmol



- Maximum infusion rate **Peripheral** Line: 10mmol/100ml NS over 1 hour.
- Eg: 1g in 100ml NS over 1 hour or 2g in 200ml NS over 2 hours.
- DO NOT DILUTE WITH D5%.



- Maximum infusion rate **Central** Line: 20-40mmol/100ml NS over 1 hour.
- DO NOT DILUTE WITH D5%.



### POTENTIALS

- Potassium solutions are hypertonic & extremely toxic to tissues.
- Extravasation which is a known complication of potassium infusions is characterized by severe local pain that can lead to significant tissue necrosis or even amputation.
- Damage that result in patient dysfunction increased cost of therapy & prolonged hospitalization.



This image depicts extravasation due to high concentration of potassium chloride infusion given peripherally. Courtesy: Guifang Yan, Extravasation of Concentrated Potassium Chloride: A Case Report, Current Therapeutic Research, Volume 95, 2021, 100646, ISSN 0011-393X.



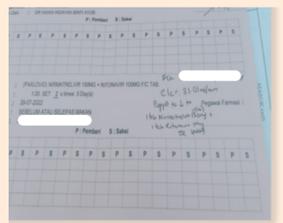
### HOW CAN WE AVOID ?

- Do check with the pharmacist if dilution is doubtful.
- Do ensure to check PPUKM Formulary APP.

## WRONG DOSE NOT ADJUSTED (PRESCRIBING ERROR)



- 57yo, Covid Category 2
- Patient's clcr was **31ml/min**, however was prescribed 2 tablets Nirmatrelvir 150mg (Total 300mg) and 1 tablet Ritonavir 100mg instead of 1 tablet Nirmatrelvir 150mg and 1 tablet Ritonavir 100mg.



Clcr: 31ml/min



Paxlovid (1 Tab Ritonavir100mg + 2 Tabs Nirmatrelvir 150mg)



Paxlovid (1 Tab Ritonavir100mg + 1 Tab Nirmatrelvir 150mg)



### POTENTIALS

- When nirmatrelvir is administered with ritonavir, CYP3A4-mediated metabolism is inhibited, resulting in renal elimination becoming the predominant mechanism for systemic clearance of nirmatrelvir.
- Nirmatrelvir which is partly excreted by the kidney, may accumulate with decreasing kidney function.
- Side effects: Increased risk of dysgeusia and diarrhea.



### HOW CAN WE AVOID ?

- Check and confirm patient's kidney function prior to prescribing.
- Avoid communicating the dose by blister pack or colors.
- Always double check with the pharmacists on the dosing.

## MONITORING ERROR NOT ACTED UPON



- 26yo, bipolar mood disorder 1 (Manic phase).
- Tablet Lithium 600mg tds (maintenance dose).
- Lithium level (taken 12 hours post dose) was within therapeutic range (0.6-1.2mmol/l) except on 17.8.22, level was low, **0.47mmol/l**.
- Patient became more manic and irritated.
- Baseline sodium level was 137mmol/l.
- Patient had been consuming high salt food (KFC fast food brought by family) since admission.
- Impending Tablet Lithium dose escalation planned.



### POTENTIALS

- Excessive salt intake may result in increased thirst and water intake leading to further lithium excretion and subsequently decreased serum lithium concentrations ensues.
- Increased lithium dose will lead to further toxicity when salt intake normalized.



### HOW CAN WE AVOID ?

- Once salt reduction was implemented, patient gradually improved without the need of Tablet lithium dose escalation.
- Lithium level subsequently returned to normalcy 0.85mmol/l.
- Serum sodium level was within the normal range, 139mmol/l.

1220626875	1220632148	1220712717
29/07/2022 06:58	03/08/2022 06:49	17/08/2022 07:03
0.62	0.87	0.47

	1220715344	1220726545	1220812308	Ref. Range	Units
LI	0.76	0.84	0.85		mmol/l
CR			86.0	(63.6 - 110.5)	umol/l
K			4.8	(3.5 - 5.1)	mmol/l
NA			139	(136 - 145)	mmol/l
UREA			5.0	(3.2 - 7.4)	mmol/l

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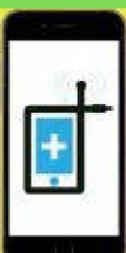
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