

# Pharmacy Bulletin

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## SHORTAGE OF POTASSIUM DIHYDROGEN PHOSPHATE 10 MMOL/10ML INJ

Hypophosphatemia is a condition of low level of phosphate in the blood. Mild (0.65- 0.81 mmol/L) and moderate (0.32—0.65 mmol/L) hypophosphatemia is usually asymptomatic and **can be treated orally**. Severe hypophosphatemia (Phosphate < 0.32 mmol/L) is commonly seen in sepsis, burn or alcoholic patients. Recently, the most common drug used for phosphate repletion **Inj Potassium Dihydrogen Phosphate 10mmol/10mL was facing nationwide shortage**. Table below shows comparison of few drugs that has the phosphate composition. Injection should be reserved for patients who are nil by mouth, have diarrhoea, ileostomy, at risk of refeeding or a short bowel. Otherwise, Oral Sodium Dihydrogen Ortho Phosphate is recommended.

May cause Osmotic Demyelination Syndrome

DRUGS	POTASSIUM DIHYDROGEN PHOSPHATE 10MMOL/10ML INJ	SODIUM DIHYDROGEN ORTHO PHOSPHATE POWDER	PHOSPHATE SANDOZ 500MG (SODIUM ACID PHOSPHATE) EFFERVESCENT TAB	SODIUM GLYCEROPHOSPHATE INJ (GLYCOPHOS)
ROUTE	INJECTION	ORAL	ORAL	INJECTION
VOLUME	10 ML/Inj	9.7 G/PACKET	500 MG TABLET	20 ML
CONTENT	PER 10 ML $K^+ = 10 \text{ MMOL}$ $PO_4^{2-} = 10 \text{ MMOL}$	DILUTE IN 50 mL with freshly boiled cooled water. Each 10 mL contains :  $PO_4^{2-} = 16 \text{ MMOL}$ $Na^+ = 15.8 \text{ MMOL}$  Remaining portion maybe kept in fridge for up to 24 hours.	PER TAB;  $K^+ = 3.1 \text{ MMOL}$ $PO_4^{2-} = 16.1 \text{ MMOL}$ $Na^+ = 20.4 \text{ MMOL}$	PER 20 ML : $PO_4^{2-} = 20 \text{ MMOL}$ $Na^+ = 40 \text{ MMOL}$  PHOSPHATE IS ORGANIC, MAY COEXIST WITH CALCIUM WITHOUT CAUSING PRECIPITATION, EVEN AT HIGH PH (ADMIXTURES MORE THAN 6.0)
DOSE	<b>Adult:</b> Severe Hypophosphatemia : Up To 10 mmol Phosphate Every 12h. Repeat If Required Until Serum Phosphate >0.3 Mmol/L	<b>10 mL OD-QID.</b> Alternatively, 2-3 mmol/kg Phosphate Daily In 2-4 divided doses. Max for 1 month – 4 years: 48 mmol/dose. Max for 5-17 years: 97mmol/dose .	<b>For Hypercalcemia Adult:</b> Up To 6 Tabs/Day  <b>Children:</b> Up To 3 Tabs/Day	<b>Adult:</b> 10-20 mmol/Day  <b>Infant &amp; Neonate:</b> 1-1.5 mmol/kg/day
COST	RM 16.42/dose	RM 0.08/dose	1 TAB = RM 1.35/dose	RM 14.83/dose
DILUTION	1 ampoule dilute in 100 ml ns, run at least 1 hour	Dissolve 1 packet (9.7g) in 50ml freshly boiled, cool water. Take 10 mL/dose. 10 mL= 16mmol Phosphate	Dissolve in 1/3 or 1/2 glass of water	Dilute 1 ampoule in 100 ml NS, run at least 8 hours
Pharmacist's comments	Low sodium . Fast correction	Cheap. Doses can go up to 2-3mmol/kg Phosphate Daily.	Expensive if used to correct phosphate. 13 x more expensive than oral Sodium dihydrogen ortho phosphate , to obtain 16 mmol Phosphate	High sodium and phosphate content per 20mL . For slow correction over 8 hours , administered in fluids

# DRUG UPDATE ON TISSEEL® FIBRIN SEALANT



**Hemostasis:** for use as an adjunct to hemostasis in adult and pediatric patients (>1 month of age) undergoing surgery when control of bleeding by conventional surgical techniques (such as suture, ligature, and cautery) is ineffective or impractical. TISSEEL is effective in heparinized patients.

**Sealing:** as an adjunct to standard surgical techniques (such as suture and ligature) to prevent leakage from colonic anastomoses following the reversal of temporary colostomies.

**\*CONTRAINDICATED** in the treatment of massive and brisk arterial or venous bleeding, and is not indicated to replace skin sutures.

**\*MUST NEVER** be given intravascularly, which can result in life-threatening thromboembolic events. (Source: Baxter)

## 2 COMPONENT :

Component 1: Sealer protein solution; *Human Fibrinogen* 91 mg/mL

Component 2 : Thrombin solution; *Human Thrombin* 500 IU/mL

Price: RM887 per sealant.

When mixed together, stimulates physiological coagulation process to achieve hemostasis, to seal and glue tissues hence supports wound healing. Use epilesionally in surgery.

## Preparation of TISSEEL for Surgery:

- Tisseel can be prepared in a water bath using 37°C or below. Product will denature if prepared above 37°C.
- Do not microwave. Do not thaw product by holding with your hands. Do not remove cap before use. Do not refrigerate.
- Do not re-freeze after thawing.
- Room Temperature Thawing: Unopened pouches can be stored for up to 48 hours at room temperature (15-25°C). Before use, warm the product to 33- 37°C and apply immediately. The total thawing and warming time cannot exceed 48 hours.

## COLD CHAIN Transport and Storage of TISSEEL:

• **TISSEEL** has to be stored at **-20 °C** or below thus a specific medical freezer calibrated at the mentioned storage temperature is compulsory.

• When the product is out from cold chain and under room temperature, Tisseel will start to thaw and thus has to be **used within 72 hours**.

• **Transport from company to Pharmacy Store :** Tisseel is wrapped in a plastic bag, packed with dry ice. The styrofoam box will indicate the validity of the cold chain environment.

• **Transport from Pharmacy Store to Operation Theatre :**

A) Wrap the Tisseel boxes with plastic or newspaper ( to ensure the water from ice pack won't touch the Tisseel as that will start the thawing process)

B) Put loads of ice pack at the bottom, and sides of cooler bag to avoid inconsistency in storage temperature.

C) Seal cooler bag and transfer within 10 minutes

D) Ensure the freezer is at least -20 celsius.

(Source: Baxter)



**DRUG SHORTAGE** (Either due to *manufacturing and quality problems, delays, and discontinuations,* )

No	Name of Medication	Formulary Category	Cause	Estimated Stock	Alternative Medi-
1	Premarin 0.3mg, 0.625mg Tab ( Conjugated Oestrogen)	B : for all to prescribe	Pfizer: Shipment delay	July 2018	Progynova 2mg Tab (Estradiol Valerate )
2	Detrusitol 4mg ER ( Tolterodine )	A* Urologists, O&G Specialists, Orthopaedic Rehab, Endocrinologists and	Pfizer: Out of stock in Malaysia	September 2018	Detrusitol 2mg given BD Vesicare 5-10mg OD
3	Bactrim Injection ( Sulphamethoxazole 400mg, Trimethoprim 80mg)	B	Problems with Stability Data requested by National Drug Regulatory	August 2018	Refer Infectious Disease Team or use Oral Bactrim

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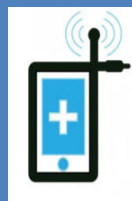
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