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PHARMACY BULLETIN

PHARMACY DEPARTMENT, HOSPITAL SERI MANJUNG

TOPIC OUTLINE

HOSPITAL SERI MANJUNG

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TO CRUSH OR NOT TO CRUSH ?

By : Farah Nurliyana binti Abd Rahim

Administration of medications via enteral tube can be given via nasogastric (NG), nasojejunal (NJ), gastrostomy, percutaneous endoscopic jejunostomy (PEJ) or percutaneous gastro-jejunostomy (PEGJ) route. Patients with swallowing difficulty will be given crushed medications via feeding tube. However, not all medications can be crushed. Careful considerations should be applied before giving medications via enteral tube:

- **Can the patient still take the medicines orally ?** (liquid preparation often available—e.g syrup paracetamol. Some tablets/capsules can be crushed/opened and administered orally with water)
- **Are all the medicines necessary ?** (possibilities of polypharmacy—review all the medications first)
- **Can alternative route be used ?** (e.g parenteral, rectal, transdermal, sublingual or buccal)
- **Is there a more suitable formulation within the same therapeutic class ?** (if the patient can take the medications orally, give other formulation such as syrup)
- **What is the size and site of the feeding tube ?** (tube size may affect the chances of tube blockage, the tube end may affect the absorption of drugs—e.g some drugs may have reduced absorption in jejunum)

Medicines that should **NEVER** be crushed include:

- **Modified/extended release tablets**—mechanism for slowing release may be damaged, patient receive full dose quicker
- **Enteric coated tablets**—coating is designed to deliver drug beyond the stomach, crushing may result medicine not reaching intended target
- **Cytotoxics—**drug may be dispersed in the air if crushed, risk for the carer or nurse
- **Hormones—**drug may be dispersed in the air if crushed, risk for the carer or nurse
- **Buccal or sublingual tablets—**reduced bioavailabilty

Alternatives routes of administration:

- Rectal (e.g paracetamol, aspirin, diclofenac)
- Parenteral (e.g IV, SC, IM)
- Transdermal (e.g ketoprofen patch)
- Sublingual/buccal (e.g GTN)

Drug related problems	Example	Preventative measures
Binding of drugs to tubes	Car-bamazepine, diazepam, phenytoin	Dilute drugs with an equal volume of water and flush with 15—30ml post dose
Tube blockage	Acidic solutions (chlorphenamine, pro-methazine)	Find alternative route/drug if possible. Dilute drug as much as possible to minimize contact
Reduced drug absorption	Car-bamazepine, ciprofloxacin, phenytoin, theophylline, warfarin	Stop feeding for 2 hours before and 2 hours after administration

References: Kaufman M.B, The Hospitalist, To crush or not to crush. April 2009.

QUIT SMOKING CLINIC HSM

By : Kua Joey

Smoking is an established cause of many diseases. It can increase the risk of getting serious diseases including lung cancer, heart disease and stroke by up to 10 times. Smoking can affect almost every single organ and tissue in our body. In Hospital Seri Manjung, **Quit Smoking Clinic (QSC)** is a service conducted with the collaboration from the Medical Department, Pharmacy Department, Psychology Counselling Unit and Health Education Unit.

Objective

- To raise awareness and spread knowledge to smokers regarding the negative impacts and dangers of smoking
- To provide motivation and counseling to smokers in their progress towards making decisions to quit smoking
- To provide information on type of treatments available in nicotine replacement therapy and assist smokers to successfully quit smoking in an individualized manner

QSC Team

The Quit Smoking Clinic team consists of:

- Health Education Officer
- Medical Officer
- Pharmacist
- Dietitian

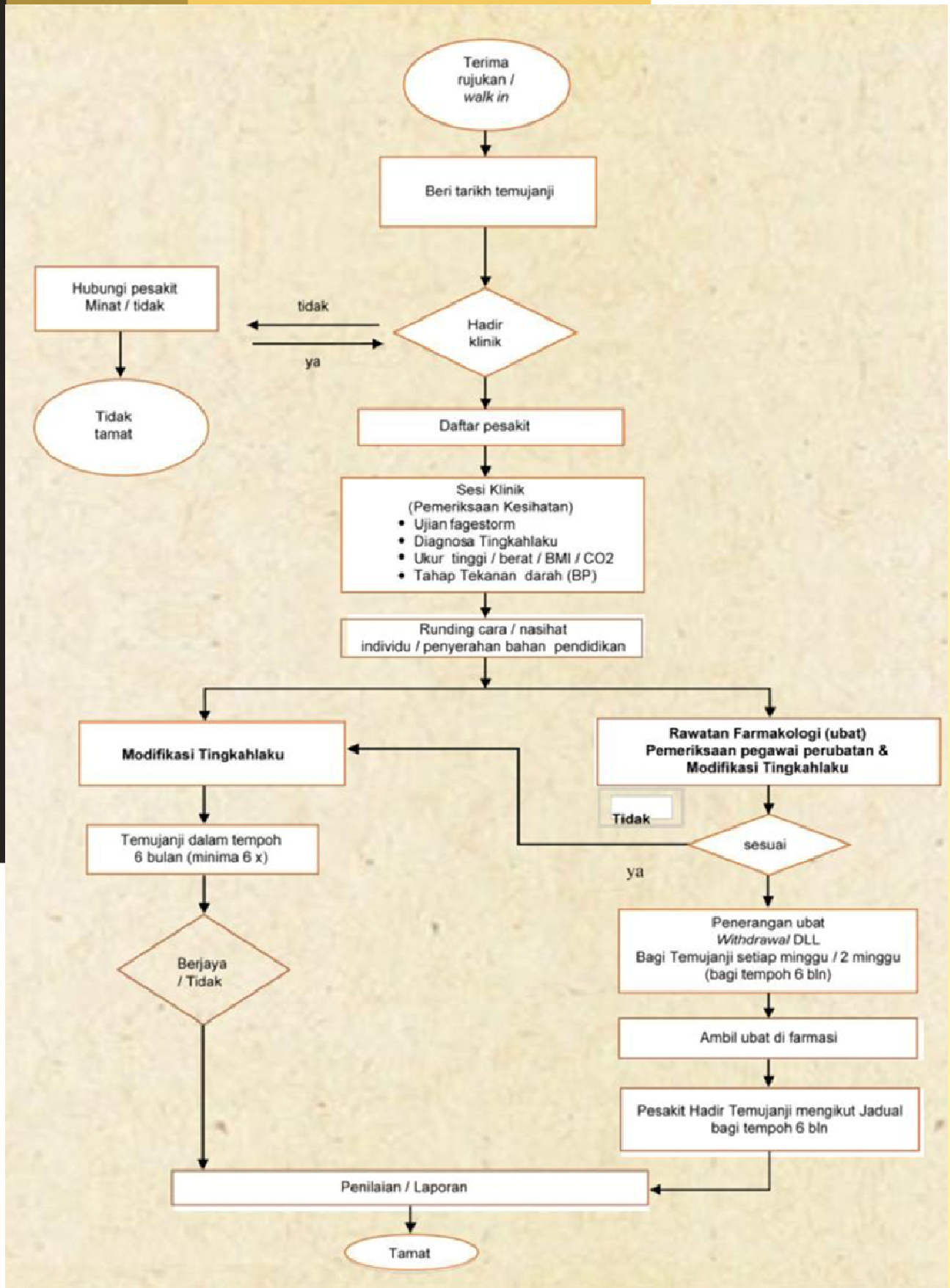
Availability

Venue	Chest Clinic
Day	Wednesday
Time	2.30pm - 4.30pm

Role of Pharmacist

- Pharmacotherapy will only be started after patients have been screened through and given education, psychological counselling and consultation with the other responsible healthcare professionals.
- Pharmacist plays a role in discussing the choice of pharmacotherapy for patient based on his/her smoking & medical history.
- Pharmacist will assist patients by providing counselling regarding the medication used and monitor them in terms of compliance, management of withdrawal symptoms or side effects that arise during the course of treatment.

Workflow in which a patient is referred to Quit Smoking Clinic :



References:
1.Pendidikan Pesakit 1/2019, Hospital Seri Manjung
2. Carta Aliran Kerja untuk Pesakit yang dirujuk ke Quit Smoking Clinin

CHAMPIX Tablets (Varenicline)

Active Ingredient	Varenicline tartrate
Availability in HSM	Varenicline 0.5mg and 1mg (STARTER pack) Varenicline 1mg (MAINTENANCE pack)
Indication	Smoking cessation
Contraindication	Hypersensitivity to varenicline or to any of the excipients of CHAMPIX
Dose	<u>Before starting course of CHAMPIX</u>: Patient decide on a date in the second week of treatment (usually between day 8 and day 14) when he/she will stop smoking. Alternatively, patient may choose a date within 5 weeks after starting treatment. Patient will begin treatment with CHAMPIX STARTER PACK and move on to MAINTENANCE PACK after completing the prior. <u>Usual Dosing Regimen</u>: STARTER PACK

Week 1	**Dose**
Day 1 – 3	0.5mg once a day
Day 4 – 7	0.5 mg twice daily, once in the morning and once in the evening, at about the same time each day
Week 2	**Dose**
Day 8 – End of Treatment	1mg twice daily, once in the morning and once in the evening, at about the same time each day

- Patients should be treated with CHAMPIX for **12 weeks**.
- For patients who have successfully stopped smoking at the end of 12 weeks, an additional course of 12 weeks treatment with CHAMPIX at 1 mg twice daily may be considered.
- Patients who are motivated to quit and who did not succeed in stopping smoking during prior varenicline therapy, or who relapsed after treatment, should be encouraged to make another attempt with varenicline.
- CHAMPIX is not recommended for use in children or adolescents <18 years due to insufficient data on safety and efficacy.

CHAMPIX Tablets (Varenicline)

Overdosage	No cases of overdose were reported in pre-marketing clinical trials.
Side effect	Common side effects: • Headache, insomnia, abnormal dreams, nausea, vomiting, constipation, flatulence For patient taking CHAMPIX who develops agitation, depressed mood, behavioural changes or suicidal thoughts, they should be referred to doctors immediately.
Drug Interactions	Based on varenicline clinical studies to date, CHAMPIX has no clinically meaningful drug interactions. No dosage adjustment of CHAMPIX with any co administered medicine (metformin, cimetidine, digoxin, warfarin) is recommended. The safety and efficacy of CHAMPIX in combination with other medicines for stopping smoking have not been studied.
Pregnancy and breastfeeding	Pregnancy: There are no adequate and well-controlled studies in pregnant women. CHAMPIX should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Breastfeeding: It is unknown whether varenicline is excreted in human breast milk. Animal studies suggest that varenicline is excreted in breast milk.
Storage	Store below 30°C and protect from light. Do not use CHAMPIX after the expiry date stated on the box and blister.
Special Precaution	• Discontinuation of varenicline at the end of treatment was associated with an increase in irritability, urge to smoke, depression, and/or insomnia in up to 3% of patients. • There have been post-marketing reports of neuropsychiatric symptoms, some serious, including changes in behavior or thinking, anxiety, psychosis, mood swings, aggressive behavior, agitation, depressed mood, suicidal ideation and suicidal behavior, in patients attempting to quit smoking with varenicline. • Physicians should discuss the efficacy and safety profile of varenicline with patients including on the possible emergence of neuropsychiatric symptoms.

References: Champix product leaflet

NICORETTE Chewing Gum (Nicotine)

Active Ingredient	Nicotine
Availability in HSM	Nicotine chewing gum 2mg AND 4mg
Indication	Treatment of tobacco dependence by relieving nicotine craving & with-drawal symptoms facilitating smoking cessation in smokers motivated to quit
Contraindication	Hypersensitivity to nicotine or any excipients in the chewing gum
Special Precaution	1. **Recent cardiovascular events** For individuals who have experienced a serious cardiovascular event, or hospitalization for a cardiovascular complaint, in the previous 4 weeks or when they suffer with uncontrolled hypertension – Nicorette chewing gum should only be used after consulting a physician. 2. Nicorette chewing gum should be used with caution in patients with severe/moderate **hepatic impairment**, severe **renal impairment**, **active duodenal and gastric ulcer**, inflammation of the stomach and inflammation of the esophagus. 3. Patients with **diabetes mellitus** may need adjustment of insulin dose as a result of smoking cessation. 4. Nicotine causes release of catecholamines from the adrenal medulla. Hence, Nicorette chewing gum should be used with caution by patients with **hyperthyroidism** or **phaeochromocytoma** (rare tumor of adrenal gland tissue).
Dose	The initial dosage should be individualized on the basis of the smoker's nicotine dependence. • Nicorette chewing gum **4 mg** is recommended for **smokers who are highly dependent** (e.g. smoking 20 cigarettes or more per day or smoking the first cigarette in the morning within 30 minutes after waking up). • **Other** smokers (e.g. smoking the first cigarette more than 30 minutes after waking up) should begin treatment with the **2 mg** dosage strength.

NICORETTE Chewing Gum (Nicotine)

<table>
<tr><td>Dose</td><td>Dosing Regimen:

<table><tr><td>Week 1 – 12</td><td>8-12 Pieces Per Day</td></tr><tr><td>Week 13 – 14</td><td>4-6 Pieces Per Day</td></tr><tr><td>Week 15 – 16</td><td>2-3 Pieces Per Day Before Weaning Off. 1 Piece If The Urge To Smoke Returns</td></tr></table>
The chart above can be used as a guide for users.
(Reference: Nicorette Icy Mint Gum Package Insert 2014)

However, as a rule of thumb:
• Most people use 8- 12 gums per day for at least 3 months.
• Do not exceed 24 gums in a day.
• Smokers should stop smoking completely during treatment with Nicorette chewing gum to maximise their chances of successful smoking cessation.
• Gradual tapering from the Nicorette chewing gum should then be initiated.
• Treatment should be stopped when the dose is reduced to 1 to 2 chewing gum per day.
• Regular use beyond 12 months is generally not recommended.
• Children & adolescents: Not to be administered to persons under 18 years of age without recommendation from a health care professional.</td></tr>
<tr><td>Overdosage</td><td>Using too much Nicorette chewing gums may cause:
• Nausea, increased salivation, diarrhoea, sweating, headache, dizziness, weakness, abdominal pain</td></tr>
<tr><td>Side effect</td><td>Common side effects:
• Mouth soreness, hiccups, dyspepsia, and jaw ache
These effects are generally mild and transient, and often can be alleviated by correcting the patient’s chewing technique.</td></tr>
</table>

NICORETTE Chewing Gum (Nicotine)

Administration	Before using the chewing gum: • Do not eat or drink 15 minutes before using the gum to avoid interference of buccal absorption of nicotine. Direction of Use: 1. Chew a piece of chewing gum when feeling the need to smoke. 2. Each piece of gum should be chewed slowly until a strong taste or mild burning sensation is experienced. 3. When the taste is strong, the gum can be rested or 'parked' between the cheek and gums so that nicotine can be taken in through the lining of the mouth. 4. When the taste and/or sensation have disappeared, chew the gum again slowly. Keep repeating Steps 2 and 3 for approximately 30 minutes. 5. Wrap used pieces in paper before throwing away. Nicotine swallowed in the saliva is not beneficial and in excess may irritate your throat or upset your stomach causing e.g. hiccups. Hence users are advised to follow through the chew and rest method. 

NICORETTE Chewing Gum (Nicotine)

Drug Interactions	Smoking is associated with increased activity of CYP1A2. In smokers who wants to quit smoking, CYP1A2 activity may be reduced hence leading to increased plasma levels of certain medications which are metabolised via CYP1A2. The increase may be of clinical significance for products with narrow therapeutic windows e.g. theophylline, clozapine or ropinirole. Plasma level of medications e.g. imipramine, olanzapine, clomipramine and fluvoxamine, might also rise after stop smoking.
Pregnancy and breastfeeding	Pregnancy: Pregnant smokers should be encouraged to quit first without pharmacological treatment. Nicotine passes to the fetus and affects its breathing movements and circulation whereby the effect is dose-dependent. *Nicorette chewing gum should not be used by pregnant patients other than when there is a high level of nicotine dependence and on physician's advice. Breastfeeding: Nicotine passes into breastmilk in small quantities that may affect the infant, even at therapeutic doses. It should be avoided when breastfeeding.
Storage	Store below 30°C and protect from light. Do not use the chewing gum after the expiry date stated on the box and blister.

References: Nicolette Icy Mint Gum 2mg/4mg Product Leaflet

WHAT IS DIGIBIND ?

DIGIBIND or also known as digoxin immune Fab is available as a sterile lyophilized powder supplied in boxes of one (1) vial containing 38 mg of purified lyophilized digoxin specific Fab fragments. Each vial will bind approximately 0.5 mg digoxin. Its **indication** is for treatment of potentially life-threatening digoxin toxicity.

Manifestations of life-threatening toxicity includes :
• Ventricular tachycardia or ventricular fibrillation • Severe bradyarrhythmias • Haemodynamically unstable or life-threatening arrhythmia • Hypotension • Serum K+ concentration >5 mmol/L (in an acute overdose) • Ingestion >10mg in adult and >0.3mg/kg in children • Plasma digoxin concentration >10ng/mL (13nmol/L)

Mechanism of Action

- DIGIBIND binds molecules of digoxin, making them unavailable for binding at their site of action on cells in the body

Method of Administration

- Administered by intravenous route over 30 minutes or as bolus (if cardiac arrest is imminent)

Side Effects

- Exacerbation of congestive heart failure, increase ventricular response in patients with atrial fibrillation and hypokalemia.

DOSAGE	
Acute overdose	Dose (No. of vials) = 1.67 x amount ingested (mg)
Chronic overdose or acute overdose after steady state has been achieved (digoxin level taken 12-16 hr after last dose)	Dose (No. of vials) = digoxin level (ng/mL) x weight (kg) x 0.01

THERAPEUTIC DRUG MONITORING	
Time to achieve steady state	Without LD : 7-14 days With LD : 12-24 hours ESRD : 15-20 days
Sampling time	Pre: 0-30 min before dose Post: Oral – at least 6 hr after dose, IV – at least 4 hr after dose
Therapeutic range	CHF : 0.5 – 0.9 ng/mL AF : 0.8 – 2 ng/mL

By : Maisarah binti Sulaiman

References:
1. DIGIBIND product leaflet, 2009-05-25/131-pristine-english-digibind.doc

By : Nurul Syuhada binti Sahak

ADUAN PRODUK

What is considered as a product ?

- A drug in a dosage unit or otherwise, for use wholly or mainly by being administered to one or more human beings or animals for a medical purpose.
- A drug to be used as an ingredient of a preparation for a medicinal purpose.

1. What is a product complaint?

National Pharmaceutical Regulatory Agency as the secretariat of Drug Control Authority (DCA) ensures that medicines are of quality, safe and effective for its intended purpose. All registered medicines should comply with the regulation set by NPRA and DCA.

Any problems of deficiencies or defects of medicines which are thought to have arisen during manufacturing, storage or handling should be reported.

2. Why you should submit a complaint?

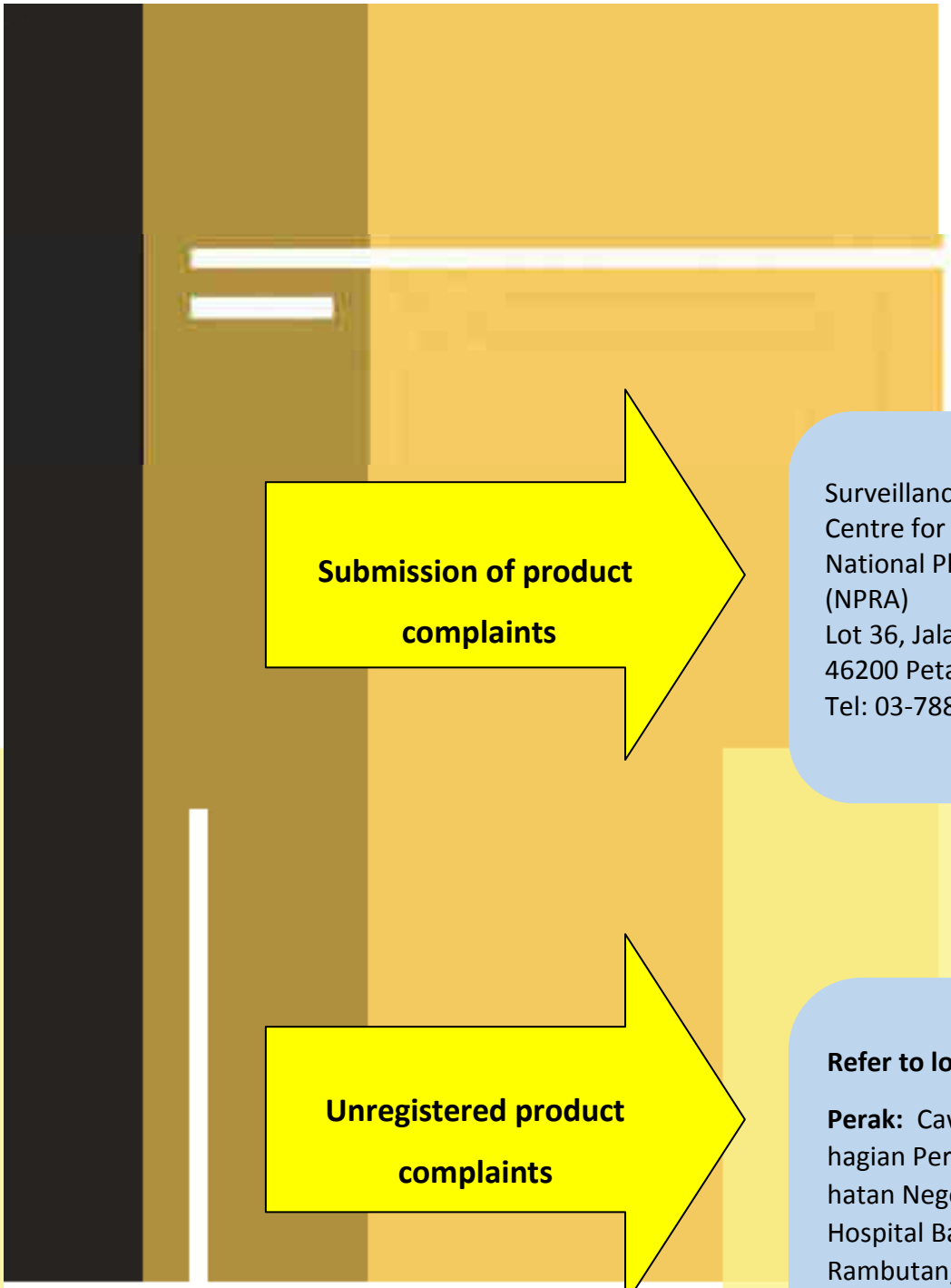
Everyone has the right to complain and the responsibility to take part in ensuring that medicine are of quality, safe and effective. By submitting a complaint, proper action can be taken against defective products in market.

3. How to lodge a complaint?

A) Fill up the complaint form which can be downloaded from NPRA website (www.npra.gov.my) under Health Professionals Form – NPRA 418.5

B) Please ensure the form is filled completely

C) For hospital and government clinics, please make sure all complaints are verified by the Chief Pharmacist/ Pharmacist in charge before submitting to the Surveillance and Product Complaint Section, NPRA.



Submission of product complaints

Surveillance and Product Complain Section,
Centre for Post Registration of Products,
National Pharmaceutical Regulatory Agency (NPRA)
Lot 36, Jalan Universiti,
46200 Petaling Jaya, Selangor
Tel: 03-7883 5400 Fax: +603-7956 2924

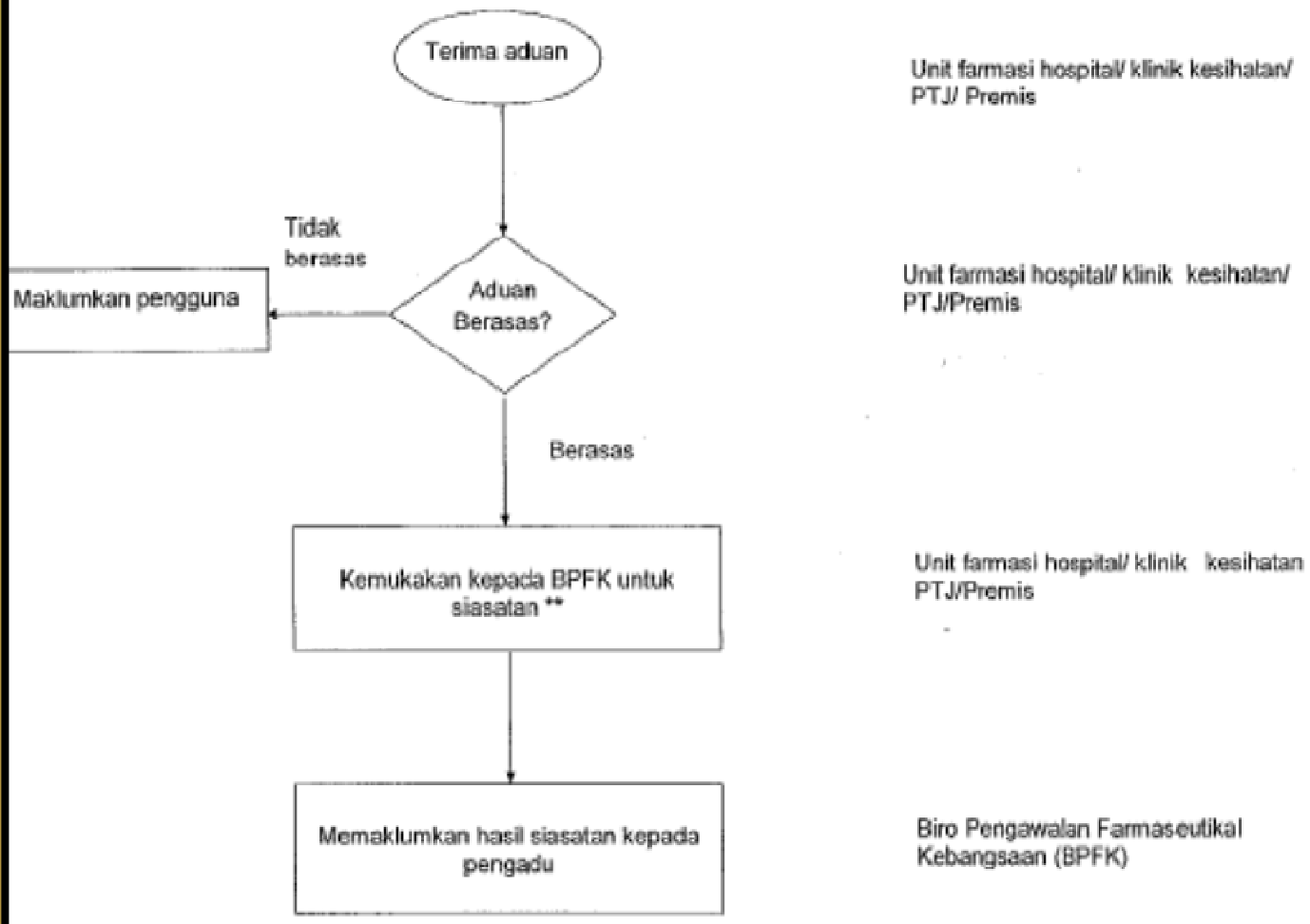
Unregistered product complaints

Refer to local Enforcement Pharmacy

Perak: Cawangan Penguatkuasa Farmasi, Bahagian Perkhidmatan Farmasi, Jabatan Kesihatan Negeri Perak, Bangunan No. JKR 3693, Hospital Bahagia Ulu Kinta,31250 Tanjung Rambutan, Perak.

Tel: 05-5337318

Carta Alir Mekanisma Penyampaian Aduan Produk Berdaftar Dengan Pihak Berkuasa Kawalan Dadah (PBKD)



Nota:

***** bagi hospital dan klinik kesihatan kerajaan:***

1. Salinan kepada Pengarah Amalan dan Perkembangan Farmasi, Kementerian Kesihatan Malaysia dan

2. Salinan kepada Pharmaniaga Logistic Sdn Bhd (untuk produk APPL sahaja)

3. Salinan kepada Bahagian Kesihatan Pergigian (jika berkaitan)

Types of Product Complaints

COMPLAINTS REGARDING UNREGISTERED PRODUCTS

- Products without MAL number
- Cosmetics without notification number
- Products without hologram sticker
- Products imported via special permit

COMPLAINTS REGARDING REGISTERED PRODUCTS	
EFFICACY	• Medicine does not produce the effects as suspected • Lack of effectiveness for its intended purpose • Frequently occur after brand switching
QUALITY	• Physical characteristics of medicine are not as claimed. • Liquified tablet.
PACKAGING & LABELLING	• Wrong info printed on label • Over-claimed label • Wrong package insert given • Empty blister supplied.
SAFETY	• Consumption/ usage of products causing unwanted side effects or adverse reactions.
OTHERS	• Any other issues regarding medicinal product

References: National Pharmaceutical Regulatory Agency (NPRA). https://www.npra.gov.my

CONVERSION OF EXJADE

EXJADE® (deferasirox) FILM-COATED TABLETS

By : Tiang Bai Hui

EXJADE DT 500mg & 125mg	EXJADE FCT 360mg & 90mg
Name in PHIS : **Deferasirox 500mg Dispersible Tablet** **Deferasirox 125mg Dispersible Tablet**	Name in PHIS : **Deferasirox 360mg Film-Coated Tablet** **Deferasirox 90mg Film-Coated Tablet**
 125mg  500mg	 90mg  360mg

Lower EXJADE FCT dose due to greater bioavailability

- 36% greater bioavailability compared with EXJADE DT oral suspension
- For patients currently on iron chelation therapy with EXJADE DT who are converting to EXJADE FCT, the dose of EXJADE FCT should be approximately **30% lower**, rounded to the nearest whole tablet

Film-coated tablets : more convenient administration than an oral suspension

- EXJADE FCT is taken once daily, on an empty stomach **or** with a light meal
- No dispersion required—tablet(s) are swallowed with water or other liquids
- May be crushed and mixed with soft foods

MAKING THE SWITCH TO EXJADE FILM-COATED TABLET

EXJADE DISPERSIBLE TABLET TO ORAL SUSPENSION	EXJADE FILM-COATED TABLET
Dosage : 20mg/kg/day	Dosage : 14mg/kg/day
Example: 75kg 3 x 500mg dispersible tablets/day 	Example: 75kg 3 x 360mg film-coated tablets/day 

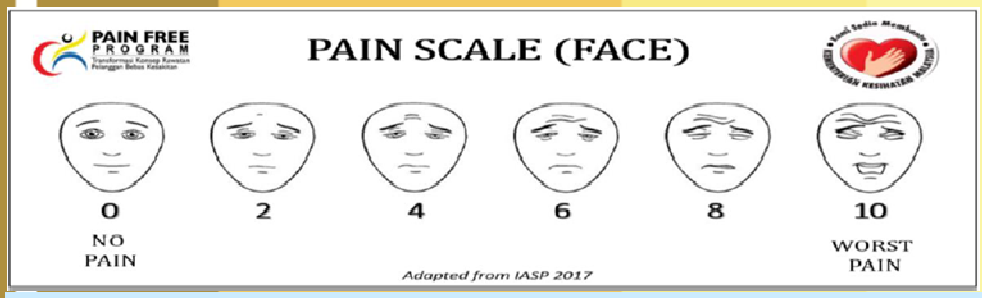
References: Exjade Film-coated tablets Malaysia Package Insert. PI RD 19 JUL 18; APPR 15 MAY 19

By : Nur Syafina Insyirah binti Zaimi

PAIN MANAGEMENT

PAIN ASSESSMENT TOOLS

Numeric Rating Scale (NRS) MOH pain scale
which is used in children more than > 7 years old and above



Visual Analog Scale (VAS) MOH pain scale
which is used in children age > 3 to 7 years

CATEGORIES	SCORING		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squiring, shifting back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, sreams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractable	Difficult to console

FLACC scale (Face, Legs, Activity, Cry, Consolability)
is applicable for children age 1 to 3 years old and adult patients who are unable to communicate verbally

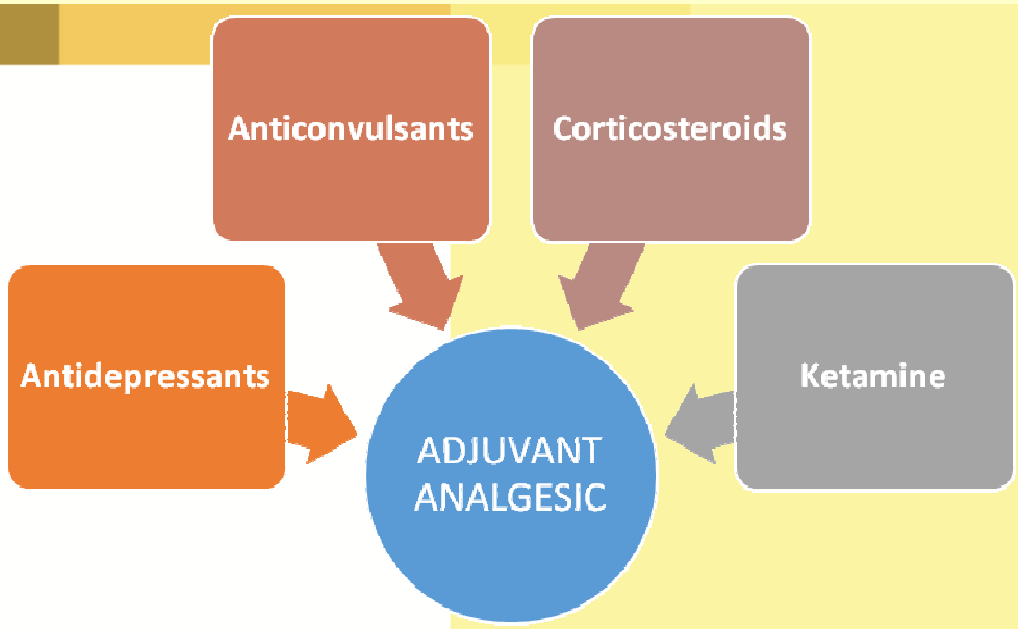
COUNSELLING POINTS & MONITORING

NON OPIOID ANALGESIC			
Name of Medication	Potential Adverse Effects	Counselling Points	Monitoring
1. Paracetamol	-Hepatic –increased bilirubin and alkaline -Renal – increased ammonia. -Allergic reactions, skin rash	-May be taken regardless of food intake. -Do not consume more than 8 tablets (4g) in 24 hours. -Abstain from heavy alcohol consumption	Liver Function Test
2. Non-selective NSAIDs: Ibuprofen, Diclofenac, Mefenamic Acid.	-GI disorders -Increased risk of stroke and myocardial infarction	To be taken after food.	Renal function test INR Careful monitoring of side effects.
3. Selective COX2 Inhibitors: Celecoxib, Etoricoxib, Parecoxib.	-GI disorders -COX2 inhibitors can also lead to renal impairment and adverse cardiovascular effects, particularly with long term use.	To be taken after food	

OPIOID ANALGESICS			
Name of Medication	Potential Adverse Effects	Counselling Points	Monitoring
Tramadol Dihydrocdeine, codeine	-Sweating, nausea, dizziness, vomiting - respiratory de-pression.	Do not handle machinery activity due to reduced level of consciousness	- Close monitoring for signs of respiratory depression. - Monitoring for signs of misuse, tolerance or addiction.
Morphine Oxycodone	GI: Abdominal pain, Constipation, Diarrhea, Nausea and Vomiting Respiratory : Dyspnea, Respiratory depression	Controlled release tablets should be swallowed whole, do not crush or chew them.	

ADJUVANT ANALGESICS

Adjuvants are medications which are not typically used for pain but may have analgesic effects in specific conditions.



ADJUVANT ANALGESICS

Antidepressants	• **Tricyclics (amitriptyline)** Used for fibromyalgia, spinal cord injury pain, cancer-related pain, depression, post-herpetic neuralgia • **Noradrenaline and serotonin reuptake inhibitors (venlafaxine, duloxetine)** • Used for atypical facial pain, fibromyalgia, and chronic post-mastectomy pain
Anticonvulsants	• **Carbamazepine** is used for trigeminal neuralgia, postherpetic-neuralgia, and diabetic neuropathy • **Gabapentin** and **pregabalin** are used for diabetic neuropathy, spinal cord injury, fibromyalgia, HIV neuropathy, multiple sclerosis related pains. • Considered first line agents for treatment of non-malignant neuropathic pain • **Lamotrigine** relieves pain from trigeminal neuralgia, HIV neuropathy, and central post-stroke pain
Corticosteroids	• **Dexamethasone** commonly used • Works by inhibiting arachidonic acid cascade to reduce inflammation • Used for neuropathic pain, cancer pain, pain due to compression fractures, headaches, tumors, and malignant bowel obstruction
Ketamine	• Analgesic doses much lower than anesthetic doses • Can be given intravenous, oral, rectal, subcutaneous, and topical routes

References:
1. HSA guide on pain killer
2. Pain Medication Therapy Management Services: Guideline For Pharmacy, Pharmaceutical Services Programme Ministry of Health Malaysia [Second Edition 2018]

By : Amy Tan Szi Sze, Nithiyalaksmi a/p Viswanathan,
Anis Afiqah binti Abdul Ghani

POISONING PROTOCOL

PARACETAMOL OVERDOSE IN ADULT

IV N- ACETYLCYSTEINE 5G/25ML

Loading dose : 150mg/kg in 200mls D5% over 15 minutes
Maintenance Dose : 50mg/kg in 500mls D5% over 4 hours,
followed by :100mg/kg in 1000mls D5% over 16 hours,
then :100mg/kg in 2000mls D5% over 24 hours

Total Duration : 3 – 7 days depends on patient condition

ACUTE LIVER FAILURE IN ADULT

IV N- ACETYLCYSTEINE 5G/25ML

Loading Dose :150mg/kg of NAC in 200mls D5% over 1 hour
Maintenance Dose: 12.5mg/kg/hr X 4 hours of NAC in 500mls D5% over 4 hours
then continuous infusion of
: 62.5mg/kg/hr in 1000mls of D5% over 67 hours

(stability of infusion solution ~ 24 hours)

PARACETAMOL OVERDOSE IN PEADIATRIC

IV N- ACETYLCYSTEINE 5G/25ML

1. 150mg/kg NAC : diluted in 3ml/kg 5%dextrose,infused over 60 minutes.
2. 50mg/kg NAC : diluted in 7ml/kg 5%dextrose, infused over next 4 hours.
3. 100mg/kg NAC : diluted in 14ml/kg 5%dextrose ,infused over next 16 hours.

ORGANOPHOSPHATES POISONING

1) GASTROINTESTINAL DECONTAMINATION

(a) *ACTIVATED CHARCOAL 25G*

Dose : 50g given within 1 hour post ingestion
Dilution :50g in 250ml of water via nasogastric tube

2) ANTIDOTES

(a) *ATROPINE 1MG/ML*

Dose : 1 – 5mg
Dose should be doubled every 3 – 5 minutes until clearing of respiratory secretions and cessation of bronchoconstriction.

Once secretions are dried, maintain with an infusion of 10% – 20% of the loading dose per hour

Dilution: IV Undiluted
IVI Dilute 8mg of atropine in 100 ml of NS

(b) *PRALIDOXIME 500MG/20ML*

Loading dose : 30mg/kg (Max: 2gm) over 30 minutes
Maintenance Dose : IV infusion of 8 – 10mg/kg/hour

OR

Loading Dose : 1 – 2g over 15-30 minutes
Maintenance Dose : Repeat initial bolus dose in 1 hr and then every 3-8 hrs if muscle weakness or fasciculations persist

Dilution: Dilute 1 – 2g in 100ml NS

(3) OTHER TREATMENTS : BENZODIAZEPINES

(a) *DIAZEPAM 10MG/2ML*

Dose **:** IV bolus 5 – 10mg, repeat as needed
Dilution : No dilution is needed

METHANOL POISONING

1) ANTIDOTE

ORAL ETHANOL 20% SOLUTION

Loading Dose : 4ml/kg (0.8g/kg) of oral ethanol 20%(40proff)
diluted in juice administered orally or via NG tube

Maintenance Dose :
Non-drinker : 0.4 – 0.7ml/kg/hr of oral ethanol 20% orally or via NG tube
Chronic alcoholic : 0.8ml/kg/hr of oral ethanol 20% orally or via NG tube

Dilution :

PREPARATION ORAL ETHANOL 20% FROM ETHANOL 96%
313ml of ethanol 96% + 1.2L distilled water 1.5L ethanol 20%

2) OTHER TREATMENTS

INJ SODIUM BICARBONATE 8.4% (for severe acidosis, pH <7.20)

Dose : IV bolus HCO_3^- 1mEq/kg (1ml = 1mEq HCO_3^-) or added to Maintenance fluids
Dilution : No dilution is needed

TRICYCLIC ANTIDEPRESSANTS AND RELATED DRUGS OVERDOSE

1) GASTROINTESTINAL DECONTAMINATION

(a) *ACTIVATED CHARCOAL*

Dose : 50g given within 1 hour post ingestion
Dilution : 50g in 250ml of water

2) ALKALINIZATION

(a) *IV SODIUM BICARBONATE 8.4%*

Dose : 1 – 2 mEq/kg
Dilution : 75 ml of IV Sodium Bicarbonate 8.4% + 425ml of Dextrose 5%
(becomes NaHCO3 1.26%)
* IV Sodium Bicarbonate 8.4% 1mEq/ml
*Urine PH aim to achieve more than 6.5

PARAQUAT POISONING

1) GASTROINTESTINAL DECONTAMINATION

(a) *ACTIVATED CHARCOAL*

Dose : 50g
Dilution : 50g in 250mL of water

(b) *FULLER'S EARTH*

Dose : 1 liter of a 15% suspension of Fuller's Earth
Dilution : Dissolve 60g with water up to 400ml to make 15% suspension)

2) IMMUNOSUPPRESSIVE THERAPHY

(a) *CYCLOPHOSPHAMIDE + METHYLPREDNISOLONE FOLLOWED BY HIGH DOSE DEXAMETHASONE*

DAY 1 & 2:

INJ. CYCLOPHOSPHAMIDE

Dose **:**15mg/kg/day over 2 hours
Dilution **:** Dilute in 200ml D5%
*Emetogenic potential
**Antiemetic needed: IV Ondansetron 8mg, 30 minutes prior to IV Cyclophosphamide

INJ METHYLPREDNISOLONE SODIUM SUCCINATE

Dose :1g/day over 2 hours
Dilution : Dilute in 200ml NS

DAY 3

INJECTION METHYLPREDNISOLONE SODIUM SUCCINATE

Dose : 1g/day over 2 hours
Dilution : Dilute in 200ml NS

DAY 4

INJECTION DEXAMETHASONE

Dose : 20mg/day in divided doses. IV slow bolus over 5 – 10 minutes
Dilution : No dilution is needed

CALCIUM CHANNEL BLOCKER

1) *IV GLUCAGON 1MG/ML*

Dose : 5 – 15mg as IV Bolus, followed by
Infusion : 5 – 10mg/hr
Dilution : a) IV Bolus – Administer over 1 minute
b) IV Infusion – Dilute 4 vials (4mg) in 50ml D5%
(concentration :0.08mg/ml)

2) *INSULIN INFUSION*

Dose : 0.5unit/kg/hr, titrate every 30 minutes to a maximum of (5 – 10unit/kg/hr)
: usual titration range is 0.5 – 2units/kg/hr

3) *IV CALCIUM GLUCONATE 10% (1G/10ML)*

Dose : 30 – 60ml (3 – 6g) every 10 – 20 minutes
OR
Infusion : 0.06 – 0.12g/kg/hr

Dose	Diluent (NS/D5)
1g	50ml
2g	100ml
3g	150ml
4g	200ml
5g	250ml
6g	300ml

4) *INTRALIPID EMULSION 20%*

Dose : 1.5ml/kg (up to 3ml/kg) bolus over 2 – 3 minutes
Infusion : 0.25ml/kg/min , may increase rate to 0.5ml/kg/min if bp declined

OPIOIDS POISONING

IV NALOXONE 0.4MG/ML

Dose : 0.4 – 2.0mg (max : 10mg) repeated at interval of 3 – 5 mins to achieve respiratory rate of about 15/min
Infusion : 2mg diluted in 500ml D5%/ NS, starting rate at 100ml/hr

BENZODIAZEPINES OVERDOSE

IV FLUMAZENIL 0.5MG/5ML

Dose : 0.2mg IV over 30 sec, if no response give 0.3mg. If there is still no response, give 0.5mg and repeat every 30 sec until a maximum dose of 3mg
Dilution: Undiluted

ANTIDOTE FOR DABIGATRAN : PRAXBIND 2.5G/50ML

Dose : 5g (2 separate vials, each containing 2.5g/50ml)

Administration of a second 5g dose of Praxbind may be considered in the following situation:

a) Recurrence of clinically relevant bleeding together with prolong clotting time

b) Patients require a second emergency surgery/urgent procedure and have a prolonged clotting time

Administration :

a) Infusion : 2 consecutive infusions over 5 to 10 minutes each

b) Bolus : Consecutively one after another via syringe

IV line must be flushed with NS prior to and at the end of infusions.

This medicinal product must not be mixed with other medicinal products.

No other infusion should be administered in parallel via the same intravenous access.

ANTIDOTE FOR WARFARIN : OCTAPLEX 500IU (20ML)

Indication :

1. Bleeding and prevention of bleeding:
   Caused by Vitamin K antagonists (i.e.warfarin) that block the effect of Vit.K and cause a shortage of Vit.K dependent clotting factors in the body. Octaplex is used when rapid correction of the shortage is required.

Dose :

Dose depends on the INR before the treatment and the targeted INR. Following table shows approximate doses required for normalisation of INR (≤1.2 within 1 hour) at different initial INR levels.

Initial INR	**2 – 2.5**	**2.5 – 3**	**3 – 3.5**	**>3.5**
Approximate dose * (mL Octaplex/kg body weight)	0.9 – 1.3	1.3 – 1.6	1.6 – 1.9	> 1.9

*Single dose should not exceed 3,000IU (= 120mL Octaplex). As these recommendations are empirical and recovery and the duration of effect may vary. Monitoring of INR during treatment is mandatory.

References: Clinical Pharmacy Unit, Pharmacy Department, Hospital Raja Permaisuri Bainun

STAFF MOVEMENT SEPT - DEC 2019

Transferred In

1. Cik Puteri Huziana bt Hushairi	Pegawai Farmasi UF48
2. Cik Siti Farzana Hanis bt Mohamad Yasin	Pegawai Farmasi UF41(K)
3. Cik Siti Farhah bt Kamaludin	Pegawai Farmasi UF41(K)
4. Cik Anissolehah bt Shaari	Pegawai Farmasi UF41(K)
5. Cik Siti Aishah bt Ahmad Suhaimi	Pegawai Farmasi UF41(K)
6. Cik Lee Ke Qing	Pegawai Farmasi UF41(K)
6. Pn Mariatie bt Mohd Nor	Pen.Peg Farmasi U29
7. Pn Rohani bt Isahak	Pembantu Tadbir N22

Transferred Out

1. Puan Nurul Adila bt Mohd Reduzan	Pegawai Farmasi UF48
2. Cik Ng Ching Wen	Pegawai Farmasi UF44
3. Puan Jamelah bt Ahmad	Pen.Peg Farmasi U36
4. Puan Norsuriana bt Mohd Yusof	Pembantu Tadbir N22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