

## SPECIAL TOPIC

# PAINKILLERS

### IN THIS ISSUE:

- Staff Updates
- Disease Management [Osteoporosis]
- Drug Updates [*Teriparatide 20 mcg/80 mcL Injection, Romosozumab 105 mg/1.17 mL Injection, Denosumab 60 mg/mL Injection*]
- Medication Safety [*Painkillers*]
- Pharmacy R&D
- Pharmacy Activities
- Pharmacy Quality Initiative Achievements
- Pharmacy R&D Achievements

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# HTAA PHARMACY

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# HTAA PHARMACY STAFF UPDATES 2024

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# HTAA PHARMACY STAFF UPDATES 2024

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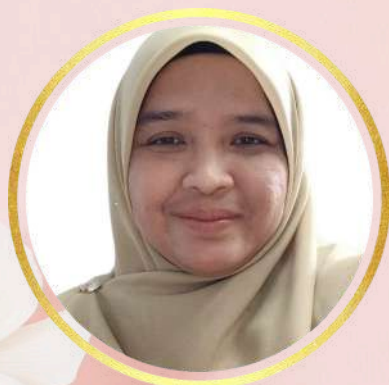
# HTAA PHARMACY

## STAFF UPDATES 2024

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**Date of Resigned:** 30/5/2024

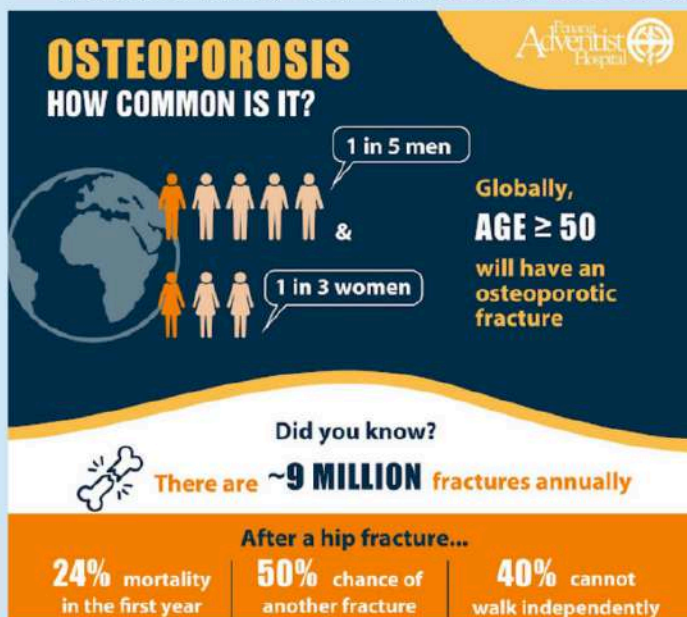


# OSTEOPOROSIS

By: Nur Ain Atiqah binti Yousry & Airene binti July

## 1. BACKGROUND

- Osteoporosis is a progressive, systemic skeletal disease characterized by decreased bone mass and bone-architectural deterioration of bone tissue leading to increase bone fragility and susceptibility to fracture.
- With increasing life expectancy, Malaysia is expected to have a growing number of elderly and osteoporosis-related fractures have been recognized as a major health problem.
- Fracture commonly occur in the spine, wrist and hip. Hip fractures are associated with high morbidity and a mortality rate of up to 20% in the first year.



## 2. CLASSIFICATION & RISK FACTORS

### PRIMARY OSTEOPOROSIS

- Post-menopausal osteoporosis
- Age-related osteoporosis
- Idiopathic osteoporosis

### SECONDARY OSTEOPOROSIS

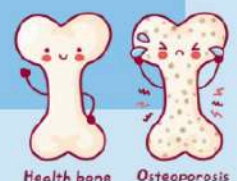
- Due to other diseases or treatments e.g T2DM, chronic kidney disease, prolonged glucocorticoid use

### Non-modifiable Risk Factors

- Advancing age
- Female gender
- Ethnic group (Oriental & Caucasian)
- Premature menopause (<45 years)
- Family history of osteoporotic hip fracture
- Previous history of fracture

### Modifiable Risk Factors

- Low calcium and/or vitamin D intake
- Cigarette smoking
- Excessive alcohol and caffeine intake
- Sedentary lifestyle
- BMI <19 kg/m<sup>2</sup>
- Estrogen deficiency



## 3. SIGNS & SYMPTOMS

- Often asymptomatic until presents with a fragility fracture.
- Fragility fractures are caused by low level trauma or mechanical forces that do not usually result in fracture.
- Vertebral fracture can cause back pain, height loss and increasing kyphosis.



# OSTEOPOROSIS

## 4. DIAGNOSIS

- A clinical diagnosis of osteoporosis can be made after a low-trauma (equivalent to a fall from standing height or less) spine or hip fracture (regardless of bone mineral density).
- Osteoporosis is diagnosed based on a T-score of  $-2.5$  or lower on bone mineral density (BMD) measurement by dual-energy X-ray absorptiometry (DXA) at the femoral neck, total hip, or lumbar spine.

## 5. MANAGEMENT

- High-risk** individuals should be treated with **anti resorptives as first line therapy**.
- Very high-risk** individuals should be initiated with **anabolic agents as first line therapy followed by anti-resorptives as an alternatives**.

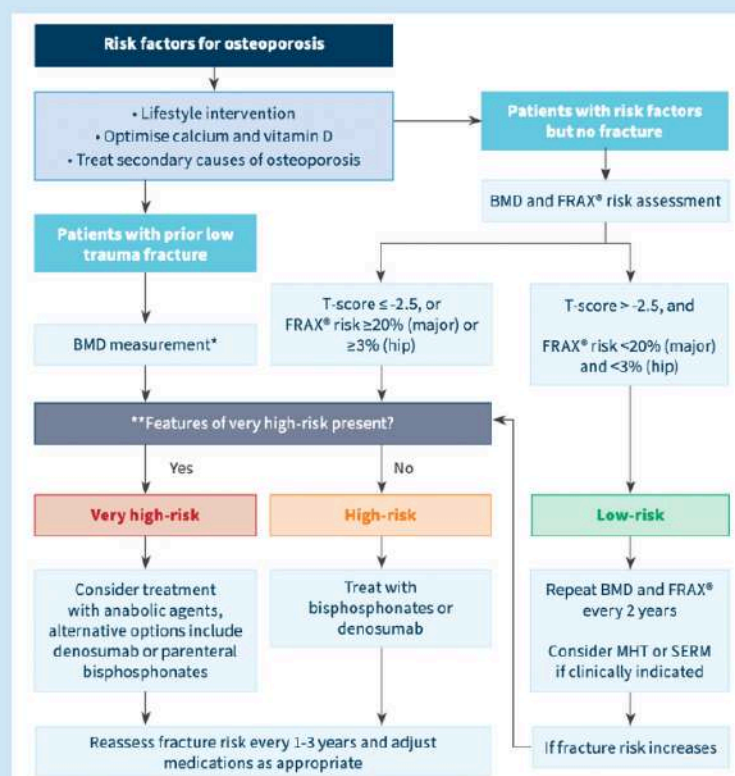


Figure 1: Treatment sequence in postmenopausal osteoporosis

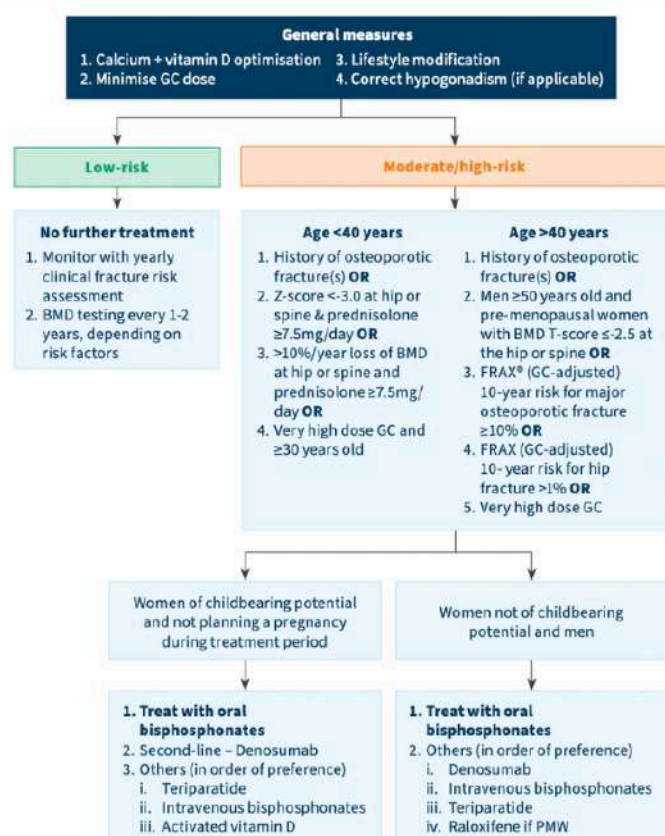


Figure 2: Treatment sequence in Glucocorticoid-Induced Osteoporosis (GIOP)

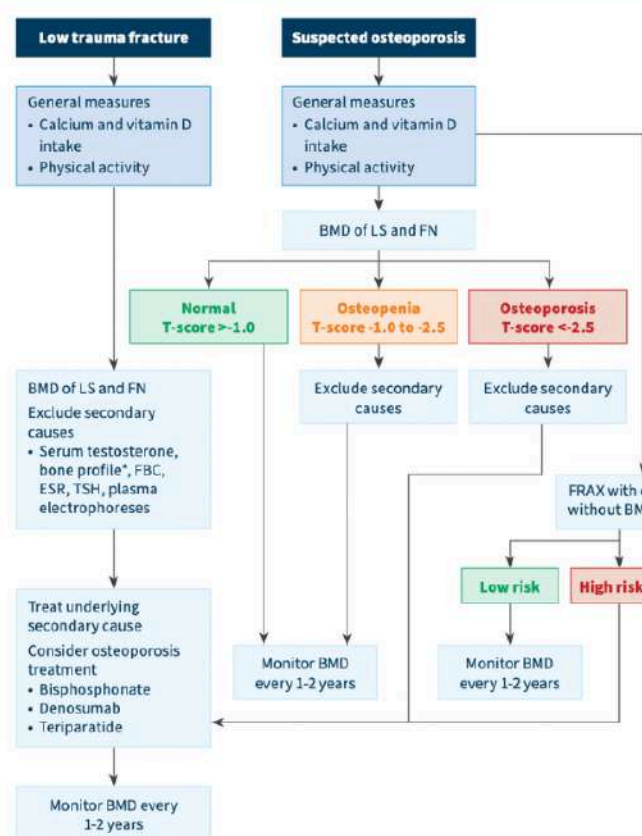


Figure 3: Treatment of Osteoporosis in Men



# OSTEOPOROSIS

## 6. Pharmacological Agents

- Treatment sequence will depend primarily on risk stratification, age, site of prior fragility fracture and patient preference, adherence and tolerability  
- refer algorithm

Intervention	BMD Improvement	Decrease Vertebral Fracture Rate	Decrease Hip Fracture Rate
Alendronate	A	A	A
Calcitriol / alfacalcidol	A	A	C
Calcium	A	A	-
Calcium + vitamin D	A	-	A
Denosumab	A	A	A
Ibandronate	A	A	-
Menopausal hormone therapy	A	A	A
Raloxifene	A	A	-
Risedronate	A	A	A
Romsozumab	A	A	-
r-PTH/teriparatide	A	A	-
Tibolone	A	*	-
Zoledronic acid	A	A	A

Table 1: The Strength of recommendations concerning interventions in the treatment of Osteoporosis

- Pharmacological agents available in HTAA

### i) Calcium

**Calcium Lactate, Calcium Carbonate, Calcium Gluconate**

### ii) Vitamin D

**Calcitriol, Alfa-Calcidol**

### iii) Biphosphonate

**Alendronate, Zolendronate**

### iv)r-PTH

**Teriparatide** (non FUKKM Item)

### v)anti-resorptive agent

**Denosumab**

### vi)anabolic agent

**Romsozumab** (non FUKKM item)

## 7. Prevention of Osteoporosis

- Vitamin D supplementation (at least 800 IU/day) in combination with calcium (1200 mg/ day elemental calcium) is recommended for fracture and fall prevention in people above 50 years old who are at risk of fractures, particularly when initiating active osteoporosis therapies.
- All adults who are vitamin D deficient be treated with 50,000 IU of vitamin D2 or vitamin D3 once a week for eight weeks to achieve a blood level of 25(OH)D above 30 ng/ml,<sup>64</sup> followed by maintenance therapy of 800–1000 IU/day.

	Age	Calcium (mg)	Vitamin D (µg)
<b>Adolescent (boys &amp; girls)</b>	16-18 years	1300	15 (600IU)
<b>Men</b>	19-65 years	1000	15 (600IU)
	>65 years	1000	20 (800 IU)
<b>Women</b>	19-49 years	1000	15 (600IU)
	50-65 years	1200	15 (600IU)
	>65 years	1200	20 (800 IU)
<b>Pregnancy</b>	1 <sup>st</sup> to 3 <sup>rd</sup> trimester	1000	15 (600IU)
<b>Lactation</b>	1 <sup>st</sup> year	1000	15 (600IU)

Table 2: Recommended Nutrient Intake (RNI) for calcium and Vitamin D according to age and sex.

- Avoid smoking as smoking increase osteoporotic fracture.
- Limit caffeine intake as high caffeine intake (>330mg/day) & excessive alcohol intake increase risk of fragility fracture.

## Drug Update 1: Teriparatide 20 mcg/ 80 mcl Injection



### Description

- It is a parathyroid hormone analog used as anabolic agent for osteoporosis in very high risk of osteoporotic fracture patients.

### Registration number

MAL20051390AZ

### Price

RM721.65/  
injection pen

### Item Category

Non FUKKM

### Indication

Osteoporosis in adults

### Dose & Administration

- Administer 20 mcg OD subcutaneously into the thigh or abdominal wall.
- **Should not be used for more than 24 months per course treatment.**

### Mechanism of action

- Teriparatide is a recombinant formulation of endogenous parathyroid hormone (PTH), containing a 34-amino-acid sequence which is identical to 34 N-terminal amino acid sequence of endogenous human parathyroid hormone
- It is similar to the physiologic activity of PTH by stimulating osteoblast function, increasing gastrointestinal calcium absorption, and increasing renal tubular calcium reabsorption.
- Results in increased bone mineral density, bone mass, and strength.
- In postmenopausal females, it has been shown to decrease osteoporosis-related fractures.

### Adverse Reaction

#### Common:

- **Local:** Pain, swelling, itching, bruising & minor bleeding at injection area (10%).
- **Gastrointestinal:** Nausea (9-14%)

#### Serious:

- **Dermatology:** Cutaneous calcification
- **Cardiovascular:** Orthostatic hypotension (8%), syncope (2.6%)
- **Endocrine & metabolism:** Hyperuricemia, Hypercalcemia
- **Gastrointestinal:** Dyspepsia (5%), gastritis (7%), vomiting (3%)
- **Nervous system:** Insomnia (5%), vertigo, anxiety and depression (4%)
- **Respiratory:** Dyspnea, pneumonia and pharyngitis (6%)
- **Musculoskeletal:** Osteosarcoma

#### Rare:

- Reduced kidney function
- Anaphylaxis and hypersensitivity reaction



# Drug Update 1: Teriparatide 20 mcg/80 ul Injection

## Precautions

### Disease related concerns:

- **Hypercalcemia:** Avoid using in known or history of hypercalcemia. May increase or exacerbate hypercalcemia.
- **Urolithiasis:** Use with caution in active or recent urolithiasis.

### Adverse effects related concerns:

- **Dermatologic (Cutaneous calcification):** Patients with underlying autoimmune disease, kidney failure or taking warfarin and systemic corticosteroids are at increased risk. Discontinue use if occurs.
- **Cardiovascular (Orthostatic hypotension):** Transient orthostatic hypotension usually occurs within 4 hours of dosing and within several doses. Usually resolved without treatment.
- **Endocrine:** May cause hypercalcemia. Avoid use in pre existing hypercalcemia.
- **Hepatic and moderate renal impairment**

## Use in Special Population

- 1. Pregnancy and lactation:** Avoid use. Should use effective contraceptive methods in child-bearing women. Consider discontinuing treatment once pregnancy is recognised.
- 2. Pediatric:** Should not be used in children or in young adults with open epiphyses.
- 3. Hepatic impairment:** Caution is recommended in patients with impaired liver function.
- 4. Renal impairment:** eGFR: >30ml/min no dose adjustment needed. Contraindicated for use in patients with severe renal impairment (CrCl < 15 ml/min), patients with HD and PD. However if treatment is necessary (use only in patients at very high risk of fracture), no dose adjustment is needed and in conjunction with guidance from nephrology team.

## Storage

- Store in a refrigerator (2 - 8°C).
- Do not freeze the medication.
- It can be used up to 28 days after the first injection, as long as the pen is stored in a refrigerator.

## Pharmacist role

1. Counsel patient regarding the importance of drugs compliance in order to achieve the desired results.
2. Counsel patient on common side effects such as pain and swelling at injection site, and to report symptoms of serious effects.
3. Provide medication therapy services that includes
  - Drug administration
  - Correct injection technique
  - Missed dose instructions
  - Storage and disposal of used needles.

## Contraindication

- Hypersensitivity to teriparatide or any of the excipients.
- Suffer from pre-existing hypercalcaemia.
- Severe renal impairment (eGFR <15mL/min).
- Bone cancer or other cancers that have spread (metastasized) to the bones.
- Metabolic bone disease (eg: Paget's disease and hyperparathyroidism).
- Pregnancy and breastfeeding.
- Children and young adults with open epiphyses (bones have not finished growing).

## References

- Consumer medication information leaflet
- Quest 3+ product search
- Uptodate
- Micromedex
- MIMS Gateway

## Drug Update 2:

### Romosozumab 105 mg/1.17 ml Injection



#### Description

- A humanized monoclonal antibody (IgG 2) sclerostin inhibitor that prevents bone resorption and increases bone formation by activating the Wnt/ $\beta$ -catenin pathway.

#### Mechanism of action

- A humanized monoclonal antibody (IgG2) that binds and inhibits sclerostin, a regulatory factor in bone metabolism that inhibits Wnt/Beta-catenin signaling pathway regulating bone growth.
- Has a dual effect on bone, increasing bone formation and decreasing bone resorption.
- Stimulates osteoblastic activity resulting in increases in trabecular and cortical bone mass and improvements in bone structure and strength.

#### Registration number

MAL21076004AZ

#### Price

RM 1413.14/box of 2 injections

#### Item category

Non-FUKKM

#### Indication

Severe osteoporosis in postmenopausal women at high risk of fracture

#### Adverse Reaction

##### Very common

1. **Neuromuscular & skeletal:** Arthralgia (13%)
2. **Infection:** URTI

##### Common:

1. **Immune system disorder:** Hypersensitivity, rash and dermatitis (7%)
2. **Neuromuscular & skeletal:** muscle spasm (5%), neck pain (2%)
3. **Local:** pain at injection site (5%), erythema (1%)
4. **CNS:** headache (7%), insomnia (2%)
5. **CVS:** cardiac disorder (2%)

##### Rare:

1. **Immune system disorder:** angioedema, erythema multiforme

#### Dose & Administration

- Administer 210mg (2 injections) subcutaneously once monthly for 12 doses.
- Efficacy and safety of treatment of Romosozumab longer than 12 doses/months has not been established.



# Drug Update 2: Romosozumab 105 mg/1.17 ml Injection

## Precautions

### Adverse effects related concern:

1. **Hypocalcemia:** Correct hypocalcemia prior to initiating therapy and monitor calcium levels closely. Patients should be adequately supplemented with calcium and vitamin D
2. **Hypersensitivity:** If an anaphylactic or other significant allergic reaction occurs including angio-oedema, erythema multiforme, and urticaria discontinue further use.

### Disease related concerns:

1. **Bone fracture:** If an atypical fracture is present, assess for signs/symptoms of fracture in contralateral limb. Consider interruption of therapy based on benefits/risks.
2. **Myocardial infarction, stroke:** Consider the benefit-risk in patients at increased risk for MI or stroke. Monitor symptoms of MI and stroke closely. If a patient experiences a MI or stroke, consider discontinuation.

## Contraindication

1. Patients with uncorrected hypocalcemia.
2. Hypersensitivity to romosozumab or to any component of the product formulation
3. Pregnancy

## Storage

- Refrigerate at 2°C to 8°C in the original carton.
- If removed from the refrigerator, it should be kept at controlled RT (up to 25°C) in the original carton and must be used within 30 days.
- Protect from direct light and do not expose to temperatures above 25°C.
- Do not freeze and store in extreme heat or cold & do not shake.

## Use in Special Population

1. **Pregnancy & lactation:** Not indicated. clinical trials showed administration of romosozumab produced minimal to slight decreases in femoral bone mineral density caused skeletal malformation including polydactyly and syndactyly.
2. **Pediatric:** The safety and efficacy use have not been established.
3. **Hepatic impairment:** No clinical studies have been conducted.
4. **Renal impairment:** No dose adjustment is required. Patients with severe renal impairment or in HD/PD are at greater risk of developing hypocalcemia. Monitoring of calcium levels is highly recommended.

## Pharmacist role

1. Counsel patient on common side effects such as arthralgia.
2. Counsel patient/caregiver to report symptoms of serious effects.
3. Advise to adequately take calcium and vitamin D especially in renal impairment and dialysis patients.
4. Provide medication therapy services that includes:
  - Drug administration
  - Proper injection technique
  - Missed dose instructions
  - Storage and disposal of medication.

## References

- Consumer medication information leaflet
- Quest 3+ product search
- Uptodate
- Micromedex
- MIMS Gateway

By: Nur Ain Atiqah binti Yousry

## Drug Update 3: Denosumab 60 mg/mL Injection



### Description

- Denosumab is a receptor activator of nuclear factor kappa-B (RANKL) inhibitor. An antiresorptive agent used in high-risk fracture patients for the management of osteoporosis.

### Mechanism of action

- Denosumab is a human IgG2 monoclonal antibody specific to the receptor activator of nuclear factor kappa-B ligand (RANKL).
- It suppresses bone resorption via inhibiting RANK-mediated activation of osteoclast through selective inhibition to the NF kappa B ligand (RANKL), preventing RANKL-RANK interaction.

### Registration number

MAL22126017AZ

### Price

RM 642.8/ prefilled syringe

### Adverse Reaction

### Indication

Osteoporosis in postmenopausal women at high risk of fracture

### Very common

- Gastrointestinal:** Constipation, Diarrhoea, Nausea (>10%)
- Musculoskeletal:** Backache (4.6% to 34.7%)
- Neurologic:** Headache (3.6% to 24%)

### Dose & Administration

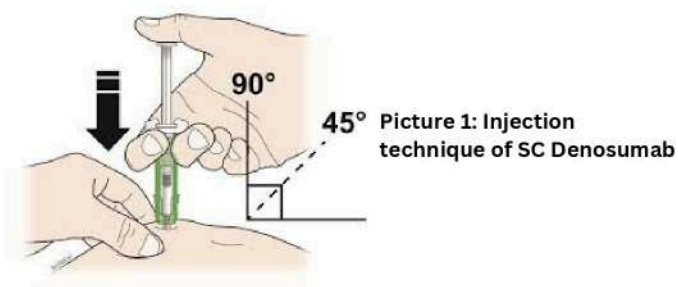
- Administer 60mg subcutaneously once every 6 months

### Common:

- Endocrine metabolic:** Hypercholesterolemia (7.2%)
- Haematologic:** Aemia (3.3%)
- Renal:** Cystitis (5.9%)
- Respiratory:** Cough (>10%)

### Rare:

- Musculoskeletal:** Jaw osteonecrosis (<6.6%)
- Endocrine metabolic:** Hypocalcaemia (0.01% to 0.1%)





### Precautions

#### Adverse effects related concern:

1. **Hypocalcaemia:** Correct hypocalcaemia before initiating therapy. Monitor calcium levels regularly. Assess patient who at increased risk for severe hypocalcaemia.
2. **Osteonecrosis of jaw (ONJ):** Treatment is delayed in patients with unhealed open soft tissue lesion in mouth. Monitor for oral symptoms e.g. dental mobility, pain or swelling, non-healing sores or discharge.
3. **Infections:** Monitor for signs or symptoms of severe infections. In patients with impaired immune systems or using immunosuppressive therapy, consider discontinuation.

#### Disease related concern:

1. **Bone fracture:** Evaluate risk of vertebral fracture following treatment discontinuation and transition patients to alternative therapy upon discontinuation.

### Contraindication

1. Hypersensitivity to denosumab or to any of the excipients.
2. Preexisting hypocalcaemia
3. Pregnancy

### Storage

- Store in a refrigerator (2 - 8°C). Do not freeze the medication.
- Once removed from the refrigerator, Prolia may be stored at room temperature (up to 25°C) for up to 30 days in the original carton. It must be used within this 30 days period.
- Keep the pre-filled syringe in the outer carton in order to protect from direct light.
- Do not shake.

### Use in Special Population

1. **Renal impairment:** No dose adjustment required. No data available for GFR < 30mL/min and patients with long-term systemic glucocorticoid therapy.
2. **Hepatic impairment:** Safety and efficacy have not been studied.
3. **Pregnancy & Breastfeeding:** Not recommended for use in pregnant women. Should be used with caution during breastfeeding, especially while nursing a newborn or preterm infant, as effects in nursing infants are unknown.
4. **Paediatric population:** Contraindicated in children < 18 years.

### Pharmacist role

1. Counsel patient/caregiver to report symptoms of common and serious effects.
2. Advise patient to adhere to the therapy and importance of taking adequate calcium and vitamin D supplementation during therapy.
3. To provide information to patients/caretaker on:
  - Drug dose and administration
  - Correct injection technique
  - Proper storage and disposal of medication

### References

- Medication information leaflet
- Uptodate
- Micromedex
- MIMS Gateway

**By: Airene Binti July**

# What To Know About

# PAINKILLERS

By: PRP Nurul Asyikin Binti Mohd Jaferi

## INTRODUCTION

### Pain

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.

(Pain as The 5th Vital Sign Guideline 3rd Edition, Ministry of Health, Malaysia)

## TYPES OF PAIN

### Acute Pain

(Pain that associated with tissue injury)

Pain that occurs suddenly over a short period (less than 3 months) and the cause of the pain is clear.

The pain disappears when the tissue heals.

Eg: burns, fell, sprained, cramps.

### Chronic Pain

(Pain lasting for >3 months or pain that persists after the injury has healed)

Pain experienced over a long period (more than 3 months), occurring repeatedly, gradually, and becoming more severe.

Still in pain even though the tissue has healed.

Eg: back pain, joint pain, headache, pain caused by cancer, and nerve pain.

## MOH PAIN SCALE



## PAINKILLERS

Painkillers or analgesics are drugs designed specifically to relief pain. There are several types of analgesics available either through prescription or over the counter in multiple pharmaceutical dosage forms such as tablet, capsule, liquid, injectable, spray or transdermal patch.



# TYPES OF PAINKILLERS



## Non-Opioid

This type of painkiller also known as 'mild pain reliever'. It is used to treat mild and moderate pain. Some non-opioid pain relievers can be obtained at pharmacies without a prescription after consulting a pharmacist.

Examples of non-opioids are: paracetamol and Non steroidal anti-inflammatory drug (NSAIDs). NSAIDs such as ibuprofen, diclofenac and aspirin works by reducing swelling and inflammation and alleviating pain.

## Opioid

Opioids such as tramadol, oxycodone and morphine can be used to treat moderate to severe short term (acute) pain and chronic pain. However, this type of painkiller requires a doctor's prescription to obtain it.

## TIME OF ADMINISTRATION

ONCE  
a day

every **24** hours

Eg: same time every day  
(day or night)

TWICE  
a day

every **12** hours

Eg: 8 am, 8 pm

THREE  
times  
a day

every **8** hours

Eg: 6 am, 2 pm, 10 pm

FOUR  
times  
a day

every **6** hours

Eg: 6 am, 12 pm, 6 pm, 12 am

SIX  
times  
a day

every **4** hours

Eg: 4 am, 8 am, 12 pm,  
4 pm, 8 pm, 12 am

What is means with  
**When Necessary  
(PRN)**



- Every medication has a **maximum dosage** for daily intake.
- Be aware of the maximum dosage of painkillers taken.

**For example:**  
Take 2 paracetamol  
tablets when necessary.

### Explanation:

- Take 2 paracetamol tablets when you feel pain.
- The **interval** between each dose should be **at least 4 to 6 hours**.
- Make sure the intake **does not exceed 8 pills a day**.

# SIDE EFFECTS OF PAINKILLERS



## PARACETAMOL

- Paracetamol is **generally safe** when used within recommended dose. However, when misused or overdose it may cause severe liver and kidney injury leading to organ transplantation or death.
- Allergic reaction usually **mild** such as skin rash, itchiness, shortness of breath, hives and facial swelling.
- Serious allergic reactions to this drug are rare.



## NSAIDs

- Allergic reaction to NSAIDs may include skin rash, itchiness, wheezing, hives and facial swelling.
- NSAIDs has potential for **gastrointestinal bleeding**:
  - **Low risk**: in people that use NSAIDs intermittently.
  - **High risk**: in people that consume them regularly in high dose.
- The risk of bleeding also increased in people;
  - a. Age >65 years old.
  - b. Had history of stomach ulcers.
  - c. Concurrent therapy of blood thinners and/or corticosteroids.
  - d. Smoking and use of alcohol.

## OPIOIDS

- Opioids are safe and effective when take in low doses but deadly when overdosed or not taken as directed by physician.
- **Common side effects**: nausea, vomiting, constipation, mood changes, and drowsiness.
- Chronic usage of opioid analgesics is linked to dependence and tolerance.

### TIPS

to reduce  
side effects

- ✓ Take the medication at the correct dose and time.
- ✓ Take the medication as directed for the specified duration.
- ✓ Choose the appropriate form of medication dosage



Inform the doctor or pharmacist before taking painkillers if:



Pregnant or planning to get pregnant.



Has an allergy to painkillers.



Breastfeeding the baby.



Suffering from heart, kidney, or liver disease.



Currently taking blood-thinning medication.



Had history of stomach ulcer.

## References

1. Health Direct. (2023, May 1). Pain-relief medicines. Retrieved from HealthDirect: <https://www.healthdirect.gov.au/pain-relief-medicines>.
2. Kee, W. W. (2015, June 24). Benefit and risk of painkiller. Retrieved from MyHeath Ministry of Health Malaysia: <http://www.myhealth.gov.my/en/benefit-and-risk-of-painkiller/>.
3. Kementerian Kesihatan Malaysia. (2024, February N.A). Ubat Tahan Sakit (Analgesik). Retrieved from Bahagian Amalan dan Perkembangan Farmasi, Program Perkhidmatan Farmasi.



# Cost utilization review of cytotoxic drugs in Hospital Tengku Ampuan Afzan, Pahang

## Authors:

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Ezzad Ashraff Ashim

Jamuna Adimolom

Ong Ruei Mae

Muhammad Nasri bin Yusoff

## Introduction

Cancer is the second leading cause of death globally, and the fourth leading cause of death in Malaysia. The treatments for cancer are mostly expensive, and therefore, a cost utilization review is important to be performed periodically in a local setting.

## Objectives

To determine trend in cost utilization of cytotoxic drugs and to evaluate cost utilization of cytotoxic drugs among departments in Hospital Tengku Ampuan Afzan (HTAA).

## Materials and Methods

This is a retrospective observational study among patients receiving chemotherapy in HTAA. All patients who received chemotherapy from year 2018 until 2020 were included in the study.

## Results

There were a total of 1938 patients who were prescribed with chemotherapy regimens from year 2018 until 2020. Cost utilization of cytotoxic drugs showed increasing trend; from RM1,434,882.46 to RM1,868,755.91, which denoted by an increment of RM433,873.45 over three years. There was an increasing trend of utilization of targeted therapy throughout the years; from RM665,923.72 to RM1,040,348.03. Rituximab and bortezomib were the targeted therapies purchased using hospital budget. A significant difference was found between cytotoxic drugs and targeted therapies in terms of cost utilization ( $Z = -4.19$ ,  $p < 0.001$ ) with Azacitidine showed a higher utilization cost (RM288,307.97). Hematology contributed the most utilization cost (RM3,641,182.31), followed by Surgical (RM557,459.17) and Gynae Oncology (RM352,586.58). The highest cost utilization for Hematology department was mainly due to the utilization of targeted therapies and expensive cytotoxic agents.

## Conclusion

An increasing trend in cost utilization of cytotoxic drugs and targeted therapy were observed over the 3 years period. Therefore, an increase of budget is crucial to cater for the current utilization, especially targeted therapies. Further drug utilization review is needed especially for targeted therapies.





# The Utilization Pattern and Expenditures of Psychiatric Drugs in A Tertiary Hospital in Pahang

Authors:

Nadia binti Abu Bakar

Chia Cheok Iian

Nurul Ili Izyan Binti Omar

Syazwani Zulkofli

Ahmad Najmi Bin Shukhoiri.

## Introduction

The usage trend of psychiatric drugs is increasing; hence drug utilization reports are necessary to revise budget allocation and plan for budget requirement to ensure sustainability of psychiatric services.

## Objectives

To describe the utilization of psychiatric drugs in psychiatric department of Hospital Tengku Ampuan Afzan (HTAA) between year 2018–2020 and to determine the costs and/or expenditures associated with these drugs

## Methodology

This retrospective, cross-sectional study was carried out on patients who received psychiatric drugs at the outpatient pharmacy from 2018 to 2020, using the Pharmacy Information Services (PhIS) prescription records. The psychiatric drugs were categorized into antidepressant, antipsychotics, anxiolytics and hypnotics. Its utilization was calculated using the World Health Organization (WHO) defined daily dose (DDD) per 1000 patients-year. The cost of 28 drugs were also analysed.

## Results

Overall, the highest utilized psychiatric drugs were antipsychotics (45.26%) and antidepressants (41.91%). The most commonly used antipsychotics is Olanzapine (26.77%) while Sertraline being the most commonly used antidepressant (26.45%). There was an exponential trend of use for Sertraline throughout 2018–2020 with total DDD per 1000 patients-year of 57.9, 66.35, and 85.05 respectively. This may be contributed by the hospital policy as well as its cheaper prices compared to other SSRIs. Of all the drugs analyzed, Quetiapine holds the highest purchasing value in total (RM 1,948,649.23). Sertraline which accounts for highest utilized antidepressant, however portrait a much lower cost (RM 62,105.00). The purchasing value is affected by many factors such as purchasing type and newer generation medications.

## Conclusion

The utilization of psychiatric drugs throughout 2018 to 2020 showed an increasing trend, in concordance with the increasing number of psychiatric cases treated in HTAA. The highest consumption were antipsychotics and antidepressants, while the highest cost purchased was Quetiapine Tablet.

# Congratulations!



**ANUGERAH FARMASI HOSPITAL TERBAIK 2023  
(SILVER AWARD) JABATAN FARMASI**



# Majlis Tilawah Al-Quran

Peringkat JKNP 2024M/1445H

29-30 Mei 2024

The BCIC Lodge Kuantan





# pharmbowl





# pharmbowl's WINNER



2



3



# BEST bowler



# pharmbowl's WINNER



1



2



3



**BEST**  
**bowler**



# HOPEFULLY LAST IN MEMORY...





# PHARMHIKE

HIKING TOUR 2024



Selamat Datang Ke  
TAMAN  
**EKO-RIMBA  
BUKIT PELINDUNG**  
JAGALAH KEBERSIHAN & KEINDAHAN HUTAN KITA  
HUTAN WARISAN ALAM UNTUK DIHAYATI

**BUKIT  
PELINDUNG**  
22 JUN 2024



# PAHANG PHARMACY UPDATES 2024

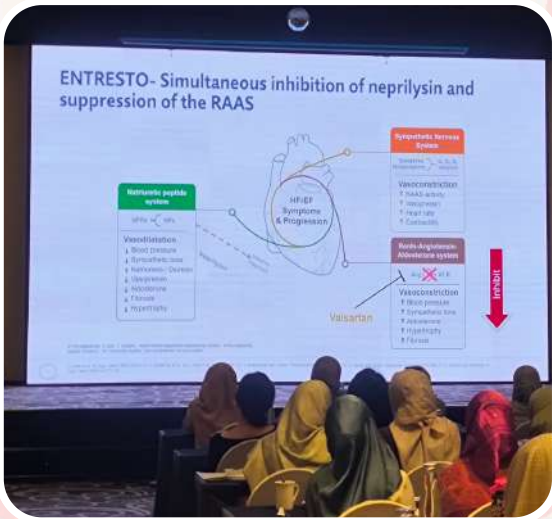
**“Uniting Expertise: Insight for Enhanced”**

**Anjuran: Clinical/TDM Unit  
Tempat: AC Hotel, Kuantan  
Tarikh: 29 Jun 2024**





PHARMACY ACTIVITY





# PROGRAM KENALI UBAT ANDA SEMPENA PROGRAM MADANI RAKYAT ZON TIMUR



**TARIKH : 5-6 JULAI 2024**

**MASA : 9PAGI-6PETANG**

**TEMPAT : Dewan MBK**



## AKTIVITI:

- PAMERAN KENALI UBAT ANDA DAN UBAT BERDAFTAR
- AKTIVITI TEKA SILANG KATA
- MEWARNA
- WHEEL OF FORTUNE

## PENGLIBATAN ANGGOTA FARMASI:

1. PF SHAHIDA
2. PF ALYAA
3. PF AZWAN
4. PF MEI TING
5. PF ZURAINI

## PENGLIBATAN DUTA SHEIKH KHAIDIR







# PROGRAMME WORLD PHARMACIST DAY 2024



ANJURAN : TEAM QUMC

TARIKH : 25 SEPTEMBER 2024

TEMPAT : SULTAN AHMAD SHAH  
MEDICAL CENTRE

## PENGLIBATAN ANGGOTA FARMASI :

- PF FADZLIANY
- PF FATIN 'IZZATI
- PF AMIRAH

## AKTIVITI:

1. PAMERAN KENALI UBAT ANDA
2. KUIZ

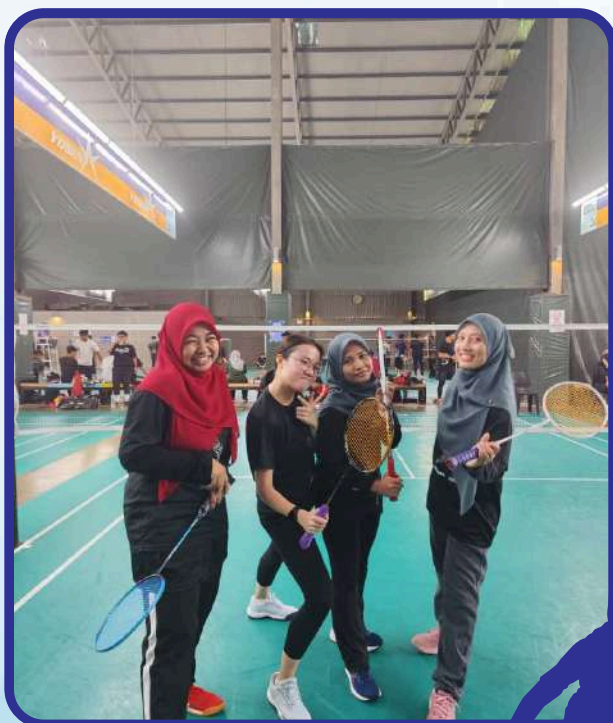




# PHARMSMASH

Tempat: Playground 6

Tarikh: 12 October 2024







# PHARMSMASH

## WINNERS

1<sup>ST</sup>



2<sup>ND</sup>



3<sup>RD</sup>



2<sup>ND</sup>



3<sup>RD</sup>



1<sup>ST</sup>





# ANNUAL GRAND MEETING & PHARMILY DAY 2024

30 SEPTEMBER 2024 | VILLA KUCHINTA, KUANTAN







**BOLA TAMPAR**



**RADIO BURUK**



**LARI PING PONG**



**TARIK UPIH**



**MEMANAH**



**MUSICAL CHAIR**



**RED LIGHT, GREEN LIGHT**



**GELUNG BATIK**





KEMENTERIAN KESIHATAN MALAYSIA

# LANGKAH PENJAGAAN KESIHATAN KENDIRI SEMASA MUSIM BANJIR



Dapatkan rawatan segera dari pasukan perubatan di PPS atau fasiliti kesihatan yang berhampiran jika mengalami sebarang gejala penyakit seperti demam, sakit perut, muntah, cirit-birit, batuk dan sebagainya.



# LANGKAH PENJAGAAN KESIHATAN KENDIRI SEMASA MUSIM BANJIR



- ✔ Sentiasa minum air yang telah dimasak atau air terawat yang dibotolkan. Penggunaan air mineral adalah digalakkan.
- ✔ Makan makanan yang telah dimasak sahaja.
- ✔ Ini bagi mengelakkan kejadian penyakit bawaan air dan makanan seperti:



KERACUNAN MAKANAN

HEPATITIS A

TIFOID

KOLERA

ACUTE GASTROENTERITIS (AGE)



UKK  
KKM

Agenda Nasional  
Malaysia Sihat

MALAYSIA  
MADANI



# PENCAPAIAN JABATAN FARMASI 2024



Anugerah Inovasi  
KKM  
5 September

PROJEK WRITE LABEL



Konvensyen QA  
Kebangsaan,  
8-10 Oktober

PROJEK TTR & DAC



Konvensyen KIK  
Sektor Awam  
6-7 November

TEMPAT KETIGA  
PROJEK WRITE LABEL



## 12th National Pharmacy Research & Development Conference

**19-21 Ogos**



## 2nd East Coast Research Day

**27-28 Ogos**

## 4th National Renal Pharmacy Scientific Meeting

**20-21 September**  
Consolation (Poster)



## 1st Borneo International Pharmaceutical Conference

**20-22 September**





# Bulletin

## Bil 21/2024

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