PHARMACY BULLETIN

HOSPITAL KUALA KUBU BHARU
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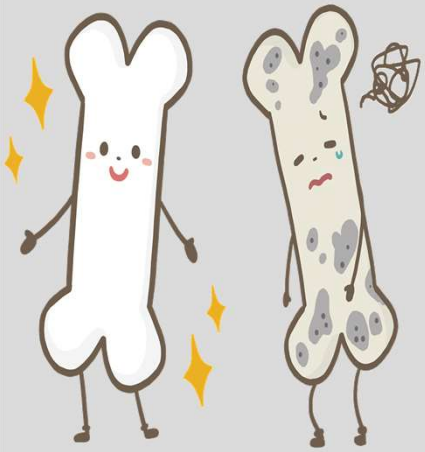
BY ABDULLAH AZIIM MOHD AZIZ

OSTEOPOROSIS



Osteoporosis is a skeletal disorder characterised by **compromised bone strength** predisposing a person to an increased risk of fracture. [1]

HOW DO I KNOW IF I HAVE OSTEOPOROSIS?

Osteoporosis do not have specific sign & symptoms. It can only be diagnosed by looking at **bone mineral density.** [1]

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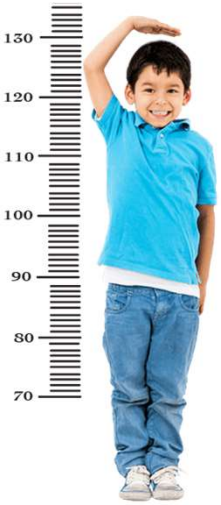
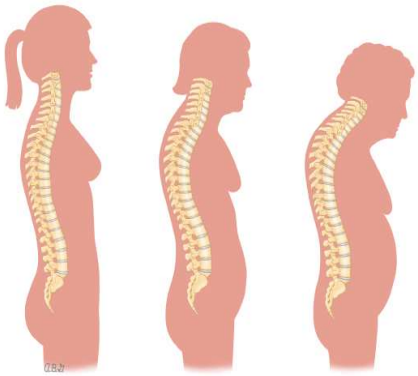
CLINICAL PRESENTATIONS[1]

LOSS OF HEIGHT



BACK PAIN

INCREASED DORSAL KYPHOSIS (DOWAGER'S HUMP)



LOW TRAUMA FRACTURE

MOVEMENTS TO AVOID[2]

HIGH IMPACT MOVEMENT

Activities such as running, jogging and jumping can lead to fractures in osteoporosis bone. Avoid rapid and jerky movement. Choose slow exercise with controlled movements.

TWISTING AND BENDING

Exercises, where bend forward at the waist and twist the waist, such as touching toes or doing sit-ups, can increase the risk of compression fractures.

NON - PHARMACOLOGICAL TREATMENTS[1]

PHARMACOLOGICAL TREATMENTS[3]

Selective Estrogen Modulators
(e.g. Raloxifene)

Activated Vitamin D
(e.g. Calcitriol)

Bisphosphonate
(e.g Alendronate)

Reduce caffeine intake

Monoclonal Antibody
(e.g. Denosumab)

Recombinant Human PTH 1 -34
(e.g. Teriparatide)

Regular exercise

Stop smoking

Supplements
(e.g. Calcium & Vitamin D)

Consume high Vitamin D food

Stop taking alcohol

Consume high calcium foods

References:
1. UpToDate: Osteoporosis (Patient Education
2. https://www.mayoclinic.org/diseases-conditions/osteoporosis/in-depth/osteoporosis/art-20044989
3. CPG Management of Osteoporosis Second Edition 2015

TETANUS

10%- 80% OF DEATHS OCCUR AMONG THE UNVACCINATED, ELDERLY OF 60 YEARS AND ABOVE & NEWBORN.[1]

BY WAN JUWAIRIAH WAN MAHRIMI

Tetanus can be categorised into:

Maternal Tetanus[2]

During pregnancy or within **6 weeks** of the end of pregnancy

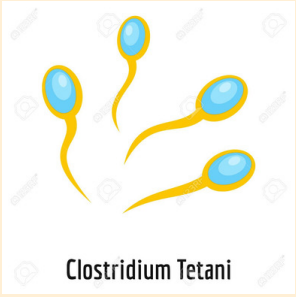
Neonatal Tetanus[2]

Within the first **28 days** of life

Tetanus

Anyone

Unclean non-sterile materials or environment are predisposing factors, but tetanus can be prevented with tetanus-toxoid-containing vaccines.[2]



Tetanus occurs when spores of **Clostridium tetani** gain access to **damaged human tissue.**

It produces the metalloprotease tetanospasmin, the **toxin.**

This will **inactivate the inhibitory neurotransmission** which results in increased muscle tone and painful **spasms.[3]**

Predisposing factors[3]:

- Absence of antibodies
- Penetrating injury
- Coinfection with other bacteria
- Devitalized tissue
- A foreign body
- Localized ischemia

Clinical settings in which tetanus can occur[3]:

- Neonates infection of the umbilical stump
- Obstetric patients (after septic abortions)
- Post-surgical patients
- Male circumcision
- Patients with dental infections

INCUBATION PERIOD[4]

Approximately **8** days

Range **3 - 21** days

Longer if distant from CNS

eg. hand/feet

Treatment[5]

Wound Debridement:

To eradicate spores and necrotic tissue, which could lead to conditions ideal for germination.

Antibiotic:

IV Metronidazole 500 mg QID-TDS for 7-10 days
OR
IV Benzylpenicillin 2MU QID for 7-10 days

Passive Immunization:

-To neutralize unbound toxin

IM Human Tetanus Immunoglobulin 3000-6000 units STAT

Prophylaxis by Active Immunization[3]

- **Tetanus does not confer immunity following recovery from acute illness.**
- **All patients should receive active immunization with a full series of tetanus and diphtheria toxoid-containing vaccines, commencing immediately upon diagnosis.**
- **Such vaccines should be administered at a different site than Tetanus Immunoglobulin.**

References:
1. Portal Rasmi MyHealth KKM, Dr Norhayati, 2014
2. WHO, Tetanus Key Facts, 2018
3. UptoDate, Tetanus, 2018
4. CDC, Epidemiology and Prevention of Vaccine-Preventable Diseases, Tetanus, 2017
5. MyNAG, Tetanus, 2014