PHARMACY DEPARTMENT
HOSPITAL SEGAMAT
HS

FARMASI

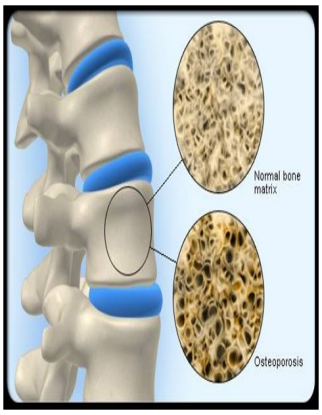
INSIDE THIS ISSUE :

Osteoporosis	1-9
Adverse Drug Reaction & MADRAC Updates	10-11
Program eMASS	12-13
Activities of Pharmacy Department	14-15
Activity 5S & Announcement	15

BULLETIN PHARMACY

2/2013

OSTEOPOROSIS



Osteoporosis is a condition characterized by a decrease in the density of bone, decreasing its strength and resulting in fragile bones. Osteoporosis literally leads to abnormally porous bone that is compressible, like a sponge. This disorder of the skeleton weakens the bone and results in frequent fractures in the bones. Osteopenia is a condition of bone that is slightly less dense than normal bone but not to the degree of bone in osteoporosis. Normal bone is composed of protein, collagen, and calcium, all of which give bone its strength. Bones that are affected by osteoporosis can break with relatively minor injury that normally would not cause a bone to fracture. The fracture can be either in the form of cracking (as in a hip fracture) or collapsing (as in a compression fracture of the vertebrae of the spine). The spine, hips, ribs, and wrists are common areas of bone fractures from osteoporosis although osteoporosis-related fractures can occur in almost any skeletal bone.

THE FACT

Osteoporosis often known as "a silent disease" is a progressive medical condition in which the bone density slowly decreases with advancing age. Osteoporosis related fractures are recognized as a major health problem by the WHO.

SYMPTOMS OF OSTEOPOROSIS

-Pain related to fractures due to minor fall or accident. Wrist pain and deformity due to fracture of the distal radius. Low back pain with radiation to the buttocks and hips or thighs due to fractures of the spine. Inability to walk, shortening of the lower limb and severe hip pain due to fracture of the hip.

-Gradual loss of height due to gradual and multiple anterior wedge facture of the spine. Loss of height as a result of weakened spines. A person may find that his/her clothes are no longer fitting and their pants looking longer. Patients may lose as much as 6 inches in height.

-Neck pain, discomfort in the neck other than from injury or trauma

-Persistent pain in the spine or muscles of the lower back

-Spinal deformities become evident like stooped posture, an outward curve at the top of the spine as a result of developing a vertebral collapse on the back

-Cramps in the legs at night

-Bone pain and tenderness

-Brittle fingernails

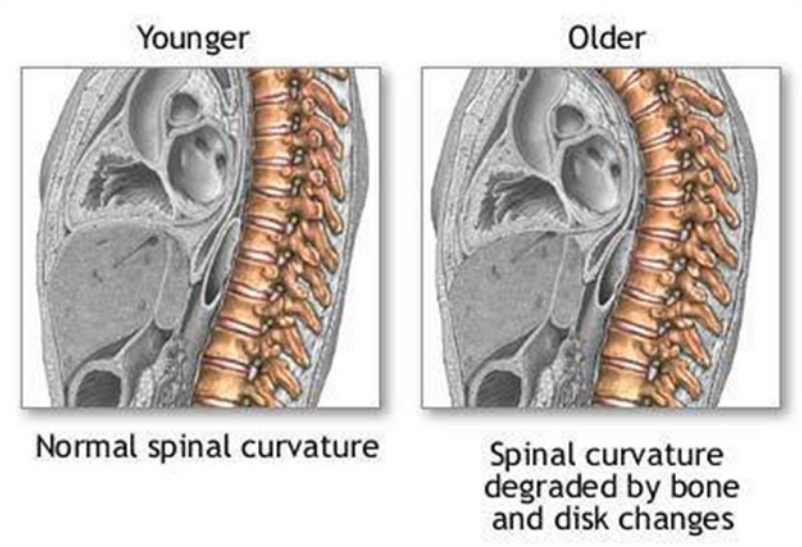
-Fatigue

-Periodontal disease

Risk factors

All of us are at risk from osteoporosis as we get older, but there are some people who are more at risk that others. These are some of the factors which can make a difference:

1.	**Oestrogen deficiency**	Woman who have had an early menopause (before the age of 45),of a hysterectomy (removal of the womb) where one or both ovaries have been are at risk
2.	**Lack of exercise**	Exercise keeps the bones strong - both as they are developing and throughout adulthood. So, anyone who does not exercise, or has an illness which makes it difficult for them to move about, will be more likely to develop osteoporosis
3.	**Poor diet**	A diet that does not include enough calcium can encourage osteoporosis
4.	**Heavy smoking**	Tobacco lowers estrogen levels in woman
5.	**Heavy drinking (alcohol)**	A high alcohol intake reduces the ability of the body's cells to make bone.
6.	**Steroids (prednisolone)**	If someone takes prednisolone over a long period of time, they can become osteoporotic
7.	**Family history**	Osteoporosis can run in families. This is probably because there is an inherited factor that affects the development of bones
8.	**Previous fractures**	People who have had a low trauma fracture are at greater risk of having another.



Prevention

Apart from the preventative measures already described, there are other treatments available if you are suffering from osteoporosis. Some of these treatments can slow down the rate of bone loss and/ or reduce the risk of future fractures.

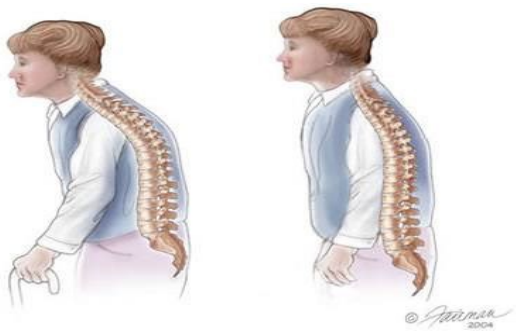
1.	**Pain Relief**	Following a fracture, you may be in considerable pain. This may be relieved by pain killers, physiotherapy/ hydrotherapy and/or calcitonin injections in the short term. At home, local heat or ice packs may be helpful.
2.	**Raloxifene**	As part of the treatment for osteoporosis, you should get adequate calcium and vitamin D, as suggested in the prevention section.
3.	**Bisphospho-nates**	Are a class of drugs for osteoporosis which inhibit bone resorption. They all slow down bone loss and prevent fractures. There are many ways to take bisphosphonates:
4.	**Strontium**	Strontium works by stimulating bone formation and reducing bone resorp-tion. It improves bone density and reduces fractures. It is taken daily.
5.	**Parathyroid hormone (PTH)**	Is a hormone naturally produced by our bodies. Given daily by subcutaneous injection, it stimulates bone formation leading to increased bone density and reduction in fractures.

DO I HAVE OSTEOPOROSIS?

In order to demonstrate bone loss, a bone scan would need to be performed. The most common type of bone scan is a DEXA test which would provide a value of Bone mineral Density (BMD). A bone scan is recommended for all women over 65 years old. In addition, women with risk factors other than menopause, postmenopausal women with a history of a fracture and women considering therapy for osteoporosis should speak to their health care providers about early testing.

WHO defined (a) Normal BMD as values >1SD (standard deviation) below to the young normal adult mean,

(b) "Osteopaenia" as value between □2.5SD and □1SD,
(c) "Osteoporosis" as BMD <□2.5SD and
(d) "Established or Severe Osteoporosis" is BMD below □2.5SD in the presence of fractures



As the bone of the spine thins, factures can occur that cause a loss of height and a forward curvature of the spine.

PREVENTION OF OSTEOPOROSIS AND FALLS

Nutrition

A balanced diet is important to provide adequate nutrients that are required for skeletal health.

(Grade B, Level IIa)

Calcium

Calcium intake is positively correlated to bone mass at all ages. A sustained high calcium intake in children and adolescents is associated with higher peak bone mass. Increased calcium intake potentiates the effect of other treatment modalities such as vitamin D and hormone replacement therapy (HRT)

(Grade A, Level Ia)

The current calcium intake in the Malaysian diet is between 300-500 mg daily. The recommended total daily calcium intake is shown in Table 7

(Grade C, Level IV)

	Age	Recommended Intake
Infants	0-6 months	300 mg (breast-fed) 400 mg (non-breast-fed)
	6-12 months	400 mg
Children	1-3 4-6 7-9	500 mg 600 mg 700 mg
Adolescents (boys & girls)	10-18	1000 mg
Men	19-49 > 50 y\ears	800 mg 1000 mg
Women	19-49 >50 years	800 mg 1000 mg
Pregnant Lactating	Third trimester	1000 mg 1000 mg

Table 7: Suggested Daily Calcium Intake

A. The absorption of calcium from human breast milk is higher than from baby formula, therefore the calcium requirement for non breast-fed babies is higher.

B. The calcium recommendation of Malaysian adolescents is 1000 mg/day based on a moderate animal protein intake 20-40 g/day.

C. During pregnancy and lactation, calcium absorption is increased and fetal bone mineralization can be obtained with no detectable mobilization of maternal bone for this purpose. However, in Malaysia where habitual calcium intake is low, a high calcium intake may possibly benefit the fetus. The recommendation for calcium during pregnancy and lactation is 1000 mg/day.

- When the diet is calcium deficient, calcium may be given in the form of supplements. The absorption of calcium supplements is highly variable ranging from 20-40% depending on the formulation as shown in Table 8. It is postulated that calcium supplements should be ingested in small divided doses and taken after meals (except calcium carbonate which should be taken with meals).

(Grade B, Level IIa)

Table 8 : Studies investigating calcium absorption from different sources

Type	Elemental Calcium (%)	Average calcium absorption (%) (range)
Calcium carbonate	40	26 (13.8-64)
Calcium citrate	21	22(12.3-31.4)
Calcium lactate	13	32
Calcium gluconate	9	34 (21.8-67.5)
Milk (non calcium enriched)	33	33(21.4 –37.7)

Vitamin D

Individuals exposed to sufficient sunlight (>15 minutes a day) should have adequate vitamin D levels. Elderly who are instituitionalised, immobile, lack outdoor activities and have a poor diet will benefit from 800 IU vitamin D supplementation daily.

(Grade A, Level Ia)

Body weight

Low body weight and excessive dieting is associated with low mineral status and increased fracture risk. Maintenance of a body mass index of not less than 19 kg/m2 is recommended for prevention of osteoporosis.

(Grade C, Level IV)

Nutritional status

Maintenance of an adequate protein and energy intake is important especially in children and the elderly.

(Grade B, Level III)

Exercise

Regular physical activity, in particular weight bearing exercise (e.g : brisk walking, line dancing) is encouraged in all age groups in order to maximise peak bone mass., decrease age related bone loss, maintain muscle strength and balance. The individual's health status should be taken into consideration when recommending an exercise programme.

Prevention of falls

Most osteoporosis-related fractures, especially in the elderly, are a consequence of decreased BMD and falls. Factors increasing risk of falls:

- Poor balance
- Reduced muscle strength
- Poor vision
- Diseases of nervous & muscoskeletal systems
- Excessive alcohol assumption
- Certain medications (e.g. sedatives, anti-hypertensives)
- Hazards in the home (e.g. steps, inadequate lighting, slippery

Evaluation of falls

Family physicians caring for older patients should integrate fall assessment into the history and physical examination. (Grade C, Level IV)

Older persons who present for medical attention because of a fall, report recurrent falls in the past year, or demonstrate abnormalities of gait and/ or balance should have a fall evaluation performed.

(Grade C, Level IV)

A fall evaluation is defined as an assessment that includes the following: history of fall circumstances, medications, acute or chronic medical problems, and mobility levels; extrapyramidal, and cerebellar function; assessment of basic cardiovascular status including heart rhythm and postural blood pressure.

Management of Postmenopausal Osteoporosis

Hormone Replacement Therapy

- Combination HRT (Oestrogen + progestin in women with intact uterus)
- ERT (Oestrogen only in women without uterus)

Oestrogen therapy is beneficial in the prevention and treatment of postmenopausal osteoporosis. It increase lumbar spine BMD up to 7.6 % and femoral neck BMD up to 4.5 % over 3 years. It reduces the risk of spine, hip and other osteoporotic fractures by 33-40%.
However, if HRT is prescribed solely for prevention of osteoporosis, other treatments should be considered first and the severity of risk should be significant.

(Grade A, Level Ib)

Effective bone protective doses of oestrogen are as shown in Table 10.

Table 10 Efeective Bone Protective Doses of Oestrogen

Type of oestrogen	Dose
Conjugated Equine Oestrogen (CEE)	0.3, 0.625 mg
Oestradiol Valerate	1.0, 2.0 mg
Transdermal oestradiol	25-100 mcg
Micronised oestradiol	0.5—1.0 mg
Tibolone	2.5 mg

Women initiating therapy for menopausal relief will receive simultaneous protection against early bone loss. The beneficial effects in fracture reduction are seen throughout the duration of HRT use.

While ERT alone has not shown to increase the risk of breast cancer and coronary heart disease, combination HRT has been found to increase the risk of breast cancer and coronary heart disease. Both combination HRT / ERT show a similar increase towards the risk of stroke.

Oestrogen therapy has also been shown to be beneficial in the treatment of urogenital symptoms associated with the menopausee and in reduction of colorectal cancer.

However the long term use of HRT/ ERT has to be assessed on an individual basis.

A full gynaecological assessment is mandatory prior to starting HRT/ERT and at regular intervals thereafter. A breast examination should be conducted at least annually and mammography at 1-3 yearly intervals. Women should be advised to perform monthly self-breast examination.

Absolute contraindications for oestrogen use are undiagnosed vaginal bleeding , severe liver disease and a history of venous thromboembolism.

However, HRT is not currently recommended as first– line treatment for the prevention and treatment of osteoporosis, as there are other alternatives available.

Based on current evidence :

1. In women considering HRT solely to prevent osteoporosis, alternatives should be considered.
2. When used for vasomotor symptoms at the early menopausal age group and for premature menopause, HRT will decrease bone loss and prevent osteoporosis.
3. HRT/ERT is not advised in women with coronary heart disease or stroke.
4. HRT is recommended in women with premature menopause with no excess risk of breast cancer if used until the normal age menopause ie, the age of 50 years.

Selective Estrogen Receptor Modulators (SERM)
Selective estrogen receptor modulators (SERMs, e.g. raloxifene at 60 mg daily) improve and preserve bone density at both the spine (2.6%) and hip (2.1%) after 4 years with a simultaneous reduction by 76% in the risk of invasive breast cancer.

Raloxifene has been shown to be beneficial in reducing vertebral fracture risk in both osteopenic and osteoporotic post menopausal women. Raloxifene can be used as therapy for the prevention and treatment of osteoporosis especially for women with an increased risk of breast cancer.

Raloxifene and oestrogen are associated with a similar increased of venous thromboembolism (VTE). However, no cases of VTE were reported amongst healthy post menopausal Asian women whilst on raloxifene.

Other side effects include hot flushes, which are more likely in the peri-menopausal period and leg cramps.

(Grade A, Level Ib)

Bisphosphonates
Bisphosphonates are potent inhibitor s of bone resorption.

Alendronate
Alendronate at 10 mg daily for 3 years increases lumbar spine BMD by up to 8.8% and femoral neck BMD by 5.9 % compared to placebo. The rate of new vertebral and hip fracture is reduced by 50 % in women with or without prior fractures. Wrist fractures are reduced by 50 % in patients with prior vertebral fractures. Fracture reduction is seen after 1 year of treatment.

Alendronate 70 mg weekly has similar efficacy to alendronate 10 mg daily in the treatment of postmenopausal osteoporosis.

Alendronate at 5 mg daily has been shown to prevent postmenopausal bone loss with similar efficacy to HRT. It is a useful alternative for women unable or unwilling to take HRT. It is a useful alternative for women unable or unwilling to take HRT. However, in established osteoporosis, the recommended daily dose of alendronate is 10 mg.

Continuous use of alendronate, for up to 10 years, if clinically indicated, produces a sustained increase in BMD with a good safety profile.

(Grade A, Level Ia)

Risedronate
Treatment with risedronate 5 mg daily for 3 years increases lumbar spine BMD by 6.4% and femoral neck BMD up to 3.4% compared to placebo. This is associated with up to a 49% reduction in new vertebral fractures in women with prior vertebral fractures and a 39% reduction in non-vertebral fractures. Vertebral fracture risk reduction is seen after 6 months of therapy. Reduction of hip fracture after 3 years of therapy was 40% in women with confirmed osteoporosis and by 60 % in women with at least one co-existing vertebral fracture. Currently, the use of risedronate for up to 5 years, is safe and efficacious. Risedronate 35 mg once weekly has similar efficacy to the 5 mg daily dosing.

(Grade A, Level Ia)

Ibandronate
Treatment with oral ibandronate 150 mg/month increases the lumbar spine BMD by 6.6% over 2 years in postmenopausal osteoporotic women without prior fracture compared to placebo. Oral ibandronate 2.5 mg daily for 3 years reduces vertebral fracture by 62% in postmenopausal women with prevalent vertebral fracture. The currently licensed ibandronate dose of 150 mg a month has been shown to be non-inferior to the 2.5 mg daily dose in terms of BMD gain and bone marker suppression. Pooled analysis showed significant reduction of non-vertebral fracture by 38-43% over 2 years.

(Grade A, Level Ib)

Zoledronic acid
Treatment with zoledronic acid (5 mg by intravenous infusion over at least 15 minutes once yearly) in osteoporotic postmenopausal women reduces the incidence of vertebral fracture by 70% over 3 years with significant reduction seen by one year. Hip fracture is reduced by 41% and non vertebral fracture by 25% over 3 years. (Grade A Level Ib)

Zoledronic acid yearly infusion is also indicated for the prevention of new clinical fractures in patients who recently (within 90 days) have had a low trauma hip fracture. It has also been shown to be associated with a reduction in mortality.

Adverse effects of bisphosphonates
Two adverse effects have been noted in bisphosphonate therapy:
1. Atypical femoral shaft fractures
2. Osteonecrosis of the jaw (ONJ)

Other common side effects of the oral bisphosphonates are gastro-intestinal, most commonly nausea, although the actual incidence is low. Proper administration of bisphosphonates will reduce the small risk of oesophagitis or oesophageal ulceration. For patients with upper gastrointestinal disease, risedronate may be better tolerated. Intravenous zoledronic acid is another option.

Calcitonin
A daily intranasal dose of 200 IU of calcitonin, will increase lumbar spine BMD by 1 % - 1.5% over 5 years and reduce vertebral fracture rate by 36%. Calcitonin has also been shown to have an analgesic effect for acute pain relief in osteoporosis related fractures.

Side effects of calcitonin include nausea, flushing, vomiting and nasal irritation.

Calcium
In established osteoporosis, calcium supplementation alone is not adequate. However, calcium supplementation potentiates other treatment modalities.

Vitamin D
Vitamin D supplementation at 800 IU/day in combination with calcium has been shown to reduce fracture in elderly populations with vitamin D deficiency.

(Grade A, Level Ib)

In most of the recent osteoporosis trials, active therapies have demonstrated significantly increased bone density and greater fracture reduction, despite calcium and vitamin D in the placebo arm. Therefore, calcium with vitamin D alone is generally considered inadequate for the treatment of osteoporosis, and should usually be prescribed together with other active osteoporosis therapies.

(Grade C, Level IV)

Activated Vitamin D
Activated Vitamin D (calcitriol 0.25 μg bd, alfacalcidol 1 μg od) has been demonstrated to increase BMD in those with established osteoporosis121,122 and reduce vertebral (47%) and non-vertebral fractures (66%).

(Level Ib)

All patients on activated Vitamin D should avoid taking more than 800 mg of calcium supplements to reduce the risk of hypercalcemia and renal stone disease. Serum and urinary calcium should be monitored periodically, 6 weeks after initiation of therapy and at 3 to 6 monthly intervals thereafter.

(Grade C, Level IV)

Recombinant human PTH 1-34 (Rpth)

Recombinant human PTH 1-34 (Rpth), teriparatide is a potent anabolic agent. Rpth is indicated for individuals with severe osteoporosis.

Subcutaneously administered Rpth at 20 microgram daily for 21 months increases lumbar spine BMD up to 8.6% and femoral neck BMD by 3.5% compared to placebo. The rate of new vertebral and non-vertebral fractures is reduced by 65% and 53% respectively.

(Grade A, Level Ib)

The drug is contraindicated in patients with open epiphyses (children and adolescents), Paget's disease of the bone, prior radiation therapy involving the skeleton, bone malignancies, metabolic bone diseases other than osteoporosis or preexisting hypercalcemia.

(Grade C, Level IV)

Strontium Ranelate

Strontium ranelate reduces bone resorption while promoting bone formation.

A pooled estimate showed a relative risk reduction of 37% for vertebral fracture and 14% for non-vertebral fracture. Efficacy for reduction of incident vertebral fractures was seen as early as 1 year (49% reduction). In a subgroup of high risk women (i.e. women aged >74 year with a femoral neck BMD T-score <-3.0), the relative risk reduction of hip fracture was 36% (RR 0.64, 95% CI 0.41-0.99), which was borderline significant. This anti-fracture efficacy is sustained up to 10 years. (Grade A, Level 1b)

Side effects include diarrhoea and Drug Rash with Eosinophilia Systemic Symptoms (DRESS).

REFERENCES

1. Clinical Guidance on Management of Osteoporosis 2012
2. Dr Yeap Swan Swin, Dr. Hew Fen Lee, Dr.Emily Goh, Dr. Lee Joon Kiong, Dr. Chan Siew Pheng, Dr. Lim Heng Hing, Dato' Dr. Lim Boon Ping, Dr. Malik Mumtaz, Dr. Siow Yew Siong, Malaysian Osteoporosis Society, http://www.osteoporosis.my/aboutUs/about_us.asp# .
3. William C. Shiel Jr., MD, FACP, FACR, Dennis Lee, MD, Catherine Burt Driver, MD, Osteoporosis
4. South East Asia RDA Harmonization (ILSI / FAO) 2002.
5. FAO / WHO 2002. Human vitamin and mineral requirements. Report of a joint FAO/ WHO expert consultation, Bangkok, Thailand.
6. Levinson, D.I. & Bockman, R.S. Areview of calcium preparations. NutrRev. 1994; 52(7): 221-232
7. Chapuy MC, Arlot ME, Duboeuf F et al. Vitamin D3 and calcium to prevent hip fractures in elderly women. N Engl J Med 1992; 327(23): 1636-42.
8. WHO. 1994. Assessment of fracture risk and its application to screening for postmenopausal osteoporosis. Technical report series 843. Geneva : WHO
9. American Geriatric Society, British Geriatric Society, American Academy of Orthopaedic Surgeons Panel on Falls Prevention . Guidelines for the prevention of falls in older people. J Am Geriatr Soc

ADVERSE DRUG REACTION HOSPITAL SEGAMAT
April 2013

* No case reported on April 2013

MADRAC UPDATES

REGULATORY MATTERS

PROTAXOS (STRONTIUM RANELATE): NEW CONTRAINDICATIONS IN VENOUS THROMBOEMBOLIC EVENTS (VTE) & REVISED WARNINGS ON SERIOUS SKIN REACTIONS

By Lee Sing Chet

Protaxos (strontium ranelate), an anti-osteoporotic drug, is now contraindicated in current or previous venous thromboembolic events (VTE), including deep vein thrombosis and pulmonary embolism. In addition, warnings on life-threatening skin reactions including Steven-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis(TEN) and Drug Rash With Eosinophilia And Systemic Symptoms (DRESS) have been strengthened to include the signs and symptoms of SJS, TEN and DRESS, as well as their time-to-onset.

In August 2011, a published French study analysing the side effects associated with strontium ranelate identified 199 severe adverse reactions from January 2006 to March 2009. Of it, 52% were cardiovascular (most frequently VTE events, 89%), and 26% were cutaneous. The anti-fractural effect is at least equal to those of bisphosphonates.[1-2]

Local Scenario

In Malaysia, there is only one registered product containing strontium ranelate i.e. Protaxos (granules for oral suspension). Strontium ranelate 2g granules is listed in the Ministry of Health (MOH) Drug Formulary, under category A* (to be initiated by consultant/specialist for for specific indications only).

The National Centre for ADR Monitoring has received 12 reports related to strontium ranelate since year 2000. There are 3 reports of serious skin reaction and 1 report of VTE.

Table 4: Reports of Serious Skin Reaction and VTE for Strontium Ranelate

Adverse Event	Age	Onset	Extent	Outcome (time after diagnosis)
Stevens Johnson syndrome	73	7 weeks	Severe	Not yet recovered (1 week)
	84	7 weeks	Moderate	Not yet recovered (4 days)
	63	5 weeks	Severe	Not yet recovered (2.5 weeks)
Deep vein thrombosis	Unknown	Unknown	Unknown	Unknown

Recommendation

MADRAC in its 126th meeting on April 12, 2012, concluded that the benefits of Protaxos continue to outweigh their risks. Healthcare professionals are reminded to make patients aware of the time-to-onset and likely signs and symptoms of severe skin reactions. Servier Malaysia Sdn Bhd, product holder for Protaxos will update the local package insert with the new contraindication and warnings as follows:

- *Contraindications*

  Current or previous venous thromboembolic events (VTE), including deep vein thrombosis and pulmonary embolism.

  Temporary or permanent immobilisation due to e.g. post-surgical recovery or prolonged bed rest.

- *Special Warnings & Precautions for Use*

  Venous thromboembolism
  PROTAXOS is contraindicated in patients with a past history of venous thromboembolic events and should be used with caution in patients at risk of VTE.

  When treating patients over 80 years at risk of VTE, the need for continued treatment with PROTAXOS should be re-evaluated. PROTAXOS should be discontinued as soon as possible in the event of an illness or a condition leading to immobilisation and adequate preventive measures taken. Therapy should not be restarted until the initiating condition has resolved and the patient is fully mobile. When a VTE occurs, PROTAXOS should be stopped.

  Skin reactions
  Life-threatening cutaneous reactions (Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN) and drug rash with eosinophilia and systemic symptoms (DRESS)) have been reported with the use of PROTAXOS.

  Patients should be advised of the signs and symptoms and monitored closely for skin reactions. The highest risk for occurrence of SJS and TEN is within the first weeks of treatment and is usually around 3-6 weeks for DRESS.

  If symptoms or signs of SJS or TEN (e.g. progressive skin rash often with blisters or mucosal lesions) or DRESS (e.g. rash, fever, eosinophilia and systemic involvement such as adenopathy, hepatitis, interstitial nephropathy, interstitial lung disease) are present, PROTAXOS treatment should be discontinued immediately.

  The best results in managing SJS, TEN or DRESS come from early diagnosis and immediate discontinuation of any suspected drug. Early withdrawal is associated with better prognosis. The outcome of DRESS is favourable in most cases upon discontinuation of PROTAXOS and after initiation of corticosteroid therapy when necessary. Recovery could be slow and recurrences of the syndrome have been reported in some cases after discontinuation of corticosteroid therapy.

  If the patient has developed SJS, TEN or DRESS with the use of PROTAXOS, PROTAXOS must not be restarted in this patient at any time.

- *Undesirable Effects*

  Skin and subcutaneous tissue disorders

Rare	:	*DRESS*
Very rare	:	*severe cutaneous adverse reactions (SCARs): Stevens-Johnson syndrome and toxic epidermal necrolysis*

PROGRAM eMASS (ELECTRONIC MEDICAL AUTOMATION SUPPLY SYSTEM)

Definisi e-MASS

- e-MASS ***(Electronic Medical Automation Supply System)*** merupakan sistem yang dikendalikan oleh **Oratis Services Sdn Bhd**.
- e-MASS berfungsi sebagai perantara untuk memudahkan pesara dan tanggungan yang layak, mendapatkan bekalan ubat dan alatan perubatan yang tidak dapat disediakan oleh Hospital/ Klinik Kerajaan.
- e-MASS adalah melalui rangkaian Farmasi Runcit yang Berdaftar dengan Oratis Services Sdn Bhd, dengan syarat-syarat yang telah ditetapkan.

Pihak yang layak

Mereka yang layak adalah PESARA:-

- Perkhidmatan Awam Persekutuan
- Ahli Parlimen
- Anggota Pentadbiran
- Setiausaha Politik Persekutuan
- Hakim MahkamahTinggi, Rayuandan Persekutuan

***e-MASS **tidak layak** untuk pesara awam negeri, pesara badan berkanun negeri, pesara tentera &pesara di bawah pihak berkuasa tempatan.*

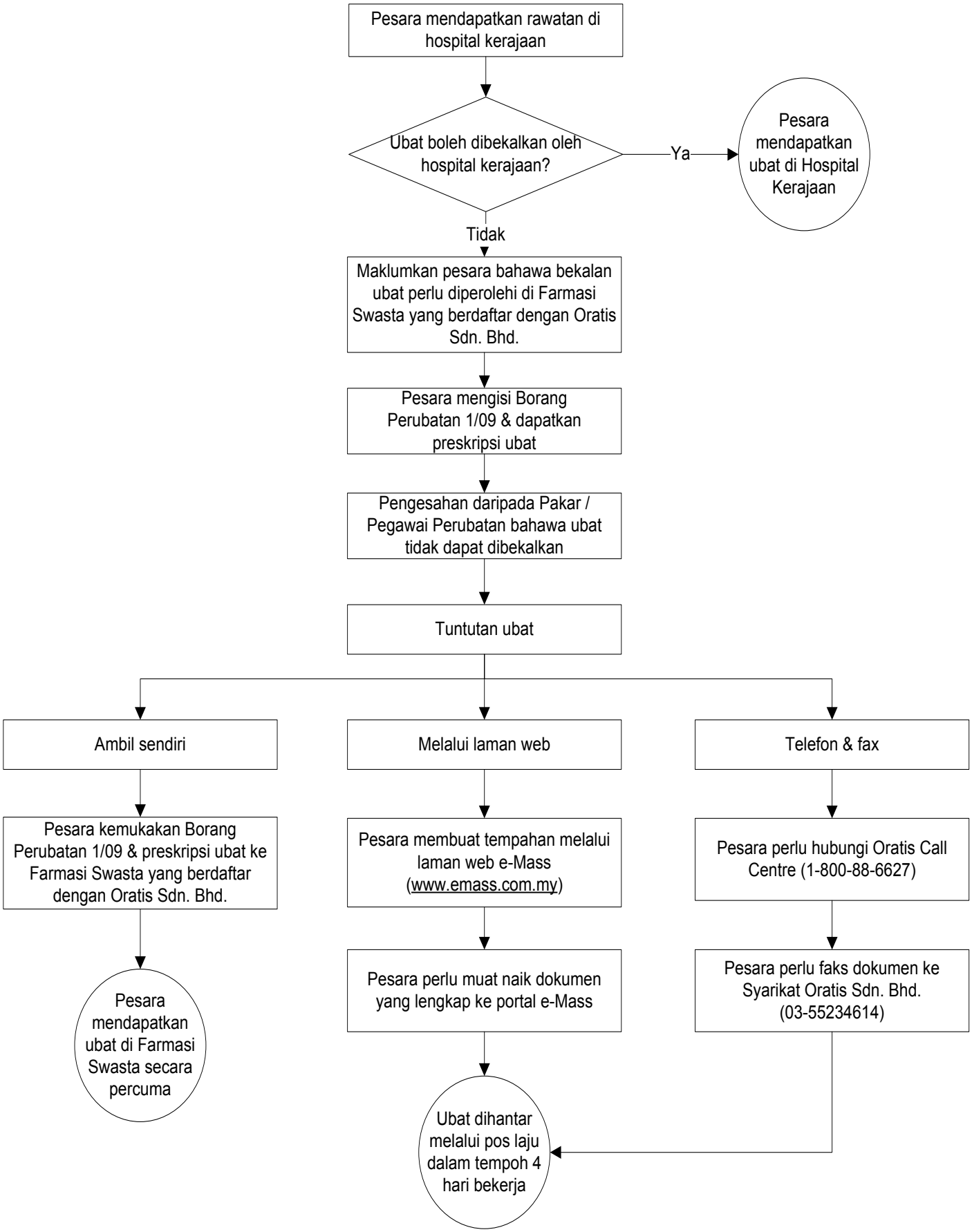
Kebaikan e-MASS

- Memudahkan proses untuk pesara dan tanggungan yang layak, mendapatkan perkhidmatan bekalan ubat serta peralatan perubatan melalui rangkaian Farmasi Runcit yang Berdaftar dengan Oratis Services Sdn Bhd, dengan syarat-syarat yang telah ditetapkan.
- Tiada pembayaran diperlukan bagi mendapatkan bekalan ubat dan alatan perubatan.
- Pembayaran akan diuruskan oleh Oratis Services Sdn Bhd.
- Khidmat penghantaran bekalan ubatan dan alatan perubatan disediakan melalui kurier Pos Laju secara percuma.

Khidmat Kurier

- Bagi memudahkan pengguna, **Oratis Services Sdn. Bhd** juga menyediakan khidma penghantaran bekalan ubat atau alatan perubatan dengan menggunakan perkhidmatan kurier Pos Laju.
- Proses penghantaran biasanya mengambil masa selama empat (4) hari bekerja bagi Semenanjung Malaysia dan lima (5) hari bekerja bagi Sabah/Sarawak, dari tarikh pesara membuat permohonan melalui email, faksimili dan juga portal e-MASS.
- Tiada sebarang pembayaran yang dikenakan bagi kos penghantaran.

CARTA ALIRAN PERMOHONAN PEMBIAYAAN KEMUDAHAN PERUBATAN MELIBATKAN UBAT BAGI PESARA (e-MASS)



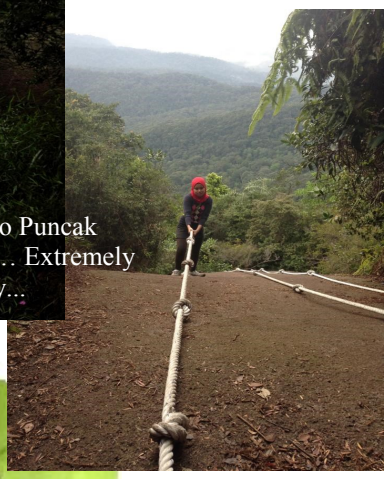
Activities of Pharmacy Department

Gunung Ledang Hiking & Camping Trip
6-7 April 2013

Beautiful view from Puncak Mahligai

Day 2
Heading to Puncak Mahligai… Extremely tough way...

Day 2
8.00am- Reached Puncak Mahligai



Day 2
4.00am– started hiking to Puncak Mahligai

Day 1
7.30pm– reached check point-4 Kolam Gajah, camping & BBQ...

Day 1
2.30pm- gathered and registered at Park Office, Taman Hutan Lagenda.

Day 1
3.30pm- reached check point 1- Bukit Semput

AKTIVITI '5S'
JABATAN FARMASI HOSPITAL SEGAMAT

Pertandingan Sistem Fail

27 MEI 2013

Syarat & Peraturan

- Penilaian akan dibuat di semua zon
- Penilaian adalah berdasarkan Kepatuhan kepada Standard 5S
- Panel Hakim adalah ahli pasukan audit dalaman 5S Jab-atan Farmasi Hospital Segamat

Pemenang akan memenangi:
Sijil + Piala 5S + Hamper

ANNOUNCEMENT

WELCOME TO PHARMACY DEPARTMENT

KHOO CHEE SHIN
PHARMACIST U41 (PRP)