

Arthritis, osteoporosis and rickets



**ASSIGN
BUSTER**

- Discuss three diseases/disorders of the skeleton; including in the discussion causes, symptoms and treatment.
- The three diseases you need to discuss are Arthritis, Osteoporosis and Rickets.

Patient 1

A sixty five year old women presents with a fractured rib after minor accident. History includes the patient is inactive with a poor diet.

Osteoporosis

Osteoporosis is a condition in which causes the bones to become weak, allowing them prone to breaking. This condition can develop over the years, however it is only treated when a minor fall or sudden impact on the bone to cause the bone to become fractured.

Causes

Osteoporosis occurs as bones become less dense and more fragile. Bone density, strength and thickness is on the increase until the ages of late 20's as you're your bone density will then begin to gradually decrease in your 30's.

Women are more at risk of developing osteoporosis than men as the changes in hormone that appears in menopause directly affect the density of the bones. Oestrogen is an essential hormone for healthy bones and after menopause takes set, oestrogen levels fall. Due to the fast decrease of oestrogen, it can cause a rapid decrease in bone density. Women have a greater chance of developing osteoporosis if they are experiencing

menopause before the age of forty five years old, or have undergone a hysterectomy before age of 45 and have had their ovaries removed, or have over exercised or dieted too much causing them to have absent periods.

Osteoporosis also affect men, however the causes is not known. Due to men having the testosterone hormone, the numbers suffering from osteoporosis compared to women suffers are a lot less, as testosterone helps keep the bones healthy. As the level of testosterone decreases with age, the more likely it is for men to develop osteoporosis.

The causes of low testosterone level is not evidently known, however the causes that are known includes the use of medications such as oral corticosteroid, alcohol abuse/misuse and hypogonadism. Hypogonadism is a condition which causes the testosterone level to be abnormally low

The risk factors which are hormone related that can contribute to the onset of osteoporosis includes, a person to have overactive thyroid (hyperthyroidism), a disorders of the adrenal glands, lower levels of sex hormone or over active parathyroid (hyperparathyroidism)

Other risk factors that contributes are family history, a BMI of 19 or less, long term high doses of oral corticosteroid, eating disorder or rheumatoid arthritis.

Symptoms

The are no signs in the early stages of bone loss or weakening of bones.

When osteoporosis have weaken your bones you may experience back pain

caused by a fracture or collapsed vertebra, gradually loss of height, a bone fracture, or a stooped posture.

Treatment

The diagnosis of osteoporosis is determined by the results of the carriers bone mineral density scan. If treatment is required, it is based on the persons age, sex, risk of fracture and also the previous injury history.

It is important to maintain a sufficient level of calcium and vitamin D if no treatment is wanted or needed.

Patient 2

A three year old child with a fracture to the femur. Other symptoms indicate deformed legs (bowed) and shorter than average for age. History confirms the child was breastfed with no supplements.

Rickets

Rickets causes the bones in children to become soft and weak, leading to bone deformities.

Causes

The under laying causes of rickets stems from lack of vitamin D or calcium, however rickets can also be caused through genetic defects or another health condition. Vitamin D and calcium are both vital sources in a child development in strong and healthy bones.

Sources of Vitamin D is sunlight, as the skin produces vitamin D when it is exposed to sunlight. Food, as vitamin D can be found in oily fish, eggs and certain breakfast cereals and also dietary supplements

Calcium can be found in dairy products such as eggs, cheese, milk, yogurt and also green vegetables.

Children that are at risk are those of Asian, Caribbean, African and middle eastern origins, as their skin is darker and requires more sunlight to receive sufficient vitamin D. Also babies born prematurely are at risk of developing rickets as they have build up stores of vitamin D in the womb. Babies from birth to 1 year, exclusively or partially breastfed, should be given a daily supplement containing 8.5 to 10mcg of vitamin D to ensure they get enough, as babies that are breastfed past the age of 6 months may be at risk of vitamin D deficiency.

Symptoms

A child may experience pain and soreness affecting the bone. They may also experience skeletal deformities which could cause thickening of the ankles, wrist, knees and cause a bowed leg. The child may also experience delayed growth and development as they could be shorter than the average child their age. A problem with dental may arise as the tooth enamel is weakened causing delays in teeth growth and risk of tooth decays. Their bones will be more prone to fractures as they have come to be fragile.

Treatment

As the rickets are caused by low level of vitamin D and calcium, it is treated by increasing the child's intake of vitamin D and calcium. This can be increased by eating more food rich in these sources or taking daily supplements of calcium and vitamin D.

Patient 3

A fifty year old man presents with trouble walking due to a painful knee joint. Other symptoms include swelling, redness and warmth to the knee. Patient also has a history of painful joints and has a body mass index of 32.

Arthritis

Arthritis is a condition which causes the joint to become painful and inflamed. Inbetween joints, there is a flexible connective tissue called cartilage. Cartilage protects the joint by absorbing the pressure and shock created when you move and release stress on them. When the cartilage tissue this can cause some forms of arthritis.

There are 2 most common forms of arthritis, rheumatoid arthritis and osteoarthritis.

Causes

Osteoarthritis, is caused by normal wear and tear. A injury or infection to the joints can cause the natural breakdown of the cartilage tissue. If you have a family history of Osteoarthritis, there maybe a higher chance of having osteoarthritis.

Rheumatoid arthritis is caused by an autoimmune disorder. This happens when the body's immune system attacks the tissues of the body. The synovium is attacked by the immune system. The synovium is the soft tissue in your joints that produces a fluid that nourishes that cartilage and lubricates the joints. Rheumatoid can potentially destroy the bone and the joint.

Symptoms of osteoarthritis

The symptoms of osteoarthritis may lead a person to experience joint pains, as well as stiffness, swelling, reduced motion and redness of skin around the joint.

Symptoms of rheumatoid arthritis are tiredness, loss of appetite, slight fever. Sufferers may potentially become anemic. A person with severe rheumatoid arthritis may experience joint deformities if it is left untreated.

Treatment

There is no cure for arthritis, however there are treatments that can slow down the condition.

Osteoarthritis, prescribed medication

- Painkillers
- Non-steroidal anti-inflammatory drugs
- Corticosteroids

For severe cases, surgical procedures may be recommended:

- Joint replacement

- Joint fuse
- Where bone is cut and re-alignment

Treatment for rheumatoid arthritis includes:

- Painkillers (analgesics)
- Disease modifying anti-rheumatic drug (DMARD)
- Physiotherapy
- Regular exercise

References

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