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Rheumatology: Current Research

Commentary

Osteoporosis: Its Complications and Counter Measures

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INTRODUCTION

Rheumatism or rheumatic disorder refers to an acute or chronic illness which is characterized by inflammation and decreased function of connecting or supporting structures, for example, the joints, ligaments, tendons, bones, and muscles.

Osteoporosis means "porous bone." It is a foundational skeletal disorder described by low bone mass, deterioration of bone tissue leading to bone fragility, and consequent increase in fracture risk. Osteoporosis is the most common disease in humans, representing a major public health problem.

Osteoporosis results from an imbalance between bone resorption and formation, in which case bone resorption considerably exceeds bone formation. The body starts to lose bone mass slowly, leaving the bones and more prone to fracture.

COMPOSITION OF BONE

Organic part

- Protein collagen
- Osteoclasts: Resorbs bone
- Osteocytes: Maintains bone tissue
- Osteoblast: Forms a bone matrix

Inorganic part

- Calcium phosphate
- Potassium
- Carbonate
- Magnesium

Bone hemostasis

It is the process of controlling the bleeding from the bone.

Bone remodelling

It is the process of breakdown of old bone (resorption) and formation of the new bone (Ossification).

TYPES OF OSTEOPOROSIS

Primary osteoporosis

Postmenopausal osteoporosis: Generally develops after menopause, when estragon levels drop steeply. These changes may lead to bone loss, usually in the trabecular (spongy) bone inside the hard cortical bone. This is why the chances of developing the disease increase as women reach menopause.

Age-associated osteoporosis: Age is an extremely high-risk factor for osteoporosis. Lack of Vitamin D and lower levels of calcium absorption is common in the elderly. Loss of bone density and muscle density develop in a ferocious circle of immobilization caused by underlying diseases.

Secondary osteoporosis

It is a loss of bone density caused by an identifiable agent or disease process such as inflammatory disorder and bone marrow cellularity disorder.

CLASSIFICATION OF OSTEOPOROSIS

Primary osteoporosis

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

Secondary osteoporosis

- Congenital
- Diet
- Drugs endocrine disorder
- Other systemic disorder

CAUSES

- Osteoporosis makes bones become weak and fragile, so brittle that a fall or even gentle anxieties, for example, twisting around or coughing can cause a crack. Osteoporosis-related breaks most commonly happen in the hip, wrist, or spine areas.

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- It causes when the formation of new bone doesn't stay aware of the loss of old bone. This may result in most inflammation results in fractures.
- This is also one of the hereditary problems that means having a family history of osteoporosis.
- Major risk factors are aging, menopause, low bone weight, low calcium intake, alcohol use, smoking, vitamin D deficiency, no physical exercise, prolonged usage of corticosteroids, low sex hormones.
- Medical issues such as hyperthyroidism, kidney failure, diabetes, multiple leukemia, rheumatoid arthritis.

SYMPTOMS

- Retroceding gums
- Weak bone
- Gradual decrease in height
- Weak and fragile fingernails
- Back and neck pain

PREVENTIONS

- Avoid alcohol and smoking
- Good diet
- Intake of sufficient amount of calcium and vitamin D
- Maintaining good bone health
- Regular exercise

PHARMACOLOGICAL TREATMENT

- Calcium and vitamin D supplements
- Bisphosphonates-Fosamax, Actonel, Boniva
- Calcitonin
- Estrogen agonists-Raloxifene

CONCLUSION

This commentary is about osteoporosis; where we stand? This shows the wide scope of science in the field of rheumatology as it has ever-growing biological knowledge.