Aggravating factors for osteoporosis; a brief overview of the current findings

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Abstract
Osteoporosis is a chronic condition characterized by low bone density and deterioration of bone tissue. Several factors such as age, gender, genetics, and lifestyle choices can contribute to the development of osteoporosis.
Keywords: Osteoporosis, Age, Genetics, Lifestyle, Hormonal disorders, Bone mass
Please cite this paper as: Zahmatkesh M. Aggravating factors for osteoporosis; a brief overview of the current findings
J Parathyr Dis. 2023;11:e11214. doi:10.34172/jpd.2023.11214.

Introduction

Osteoporosis is a chronic skeletal disorder characterized by low bone mass and microarchitectural deterioration of bone tissue, leading to increased bone fragility and susceptibility to fractures (1). The prevalence of osteoporosis is rising worldwide, and it is estimated that by 2050, the number of hip fractures will increase by 310% in men and 240% in women. Several factors contribute to the development of osteoporosis, including genetic, hormonal, nutritional, lifestyle, and environmental factors (2-4). In this review paper, we will discuss the different aggravating factors for osteoporosis.

Methods

A literature search was conducted using PubMed and Google Scholar, utilizing the following search terms: osteoporosis, age, genetics, lifestyle, bone mass, and hormonal disorders.

Factors aggravate the osteoporosis

Osteoporosis is a multifactorial disease, and many factors can contribute to its development. Identifying and addressing these aggravating factors can help prevent and manage the disease (1,5). While several risk factors for osteoporosis have been identified, aggravating factors can exacerbate the condition. Some of the aggravating factors are:

Age: aging is the most significant risk factor for osteoporosis, and the risk increases as people get older. Bones lose density and strength over time due to hormonal changes and decreased bone turnover (6).

Gender: women are more susceptible to osteoporosis than females. Estrogen plays a crucial role in bone health, and as women age and enter menopause, they experience a significant decline in estrogen levels, leading to a decrease in bone density (7, 8).

Genetics: genetic factors are essential in determining bone health. A family history of fractures and osteoporosis can significantly increase an individual's risk of developing the condition (9, 10).

Lifestyle choices: certain lifestyle factors can contribute to the development of osteoporosis (11).

Lack of physical activity: sedentary lifestyles and lack of exercise can lead to bone loss and increased risk of fractures (12).

Smoking: Smoking is a known risk factor for osteoporosis as it reduces bone mass, decreases bone formation, and increases bone resorption (13).

Alcohol consumption: as with smoking, excessive alcohol consumption can negatively affect bone health and increase the risk of osteoporosis (14).

Low calcium and vitamin D intake: Calcium and vitamin D are vital nutrients for maintaining bone health. Insufficient intake of either nutrient can result in weakened bones and a higher susceptibility to fractures (15).

Medical conditions

Several conditions can increase an individual's risk of developing osteoporosis (16).

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■ **Implication for health policy/practice/research/ medical education**

Osteoporosis is a complex condition that results from the interplay between multiple factors, including age, gender, genetics, lifestyle, and medical conditions. By incorporating healthy lifestyle habits and seeking appropriate medical interventions, individuals can significantly reduce the risk or slow down the progression of osteoporosis.

Hormonal disorders: medical conditions that affect hormone levels, such as hyperthyroidism, hypogonadism, and Cushing's syndrome, can increase the risk of osteoporosis (17).

Rheumatoid arthritis: rheumatoid arthritis is an autoimmune disorder that can lead to joint damage and bone loss, increasing the risk of osteoporosis (18).

Medications: certain medications, such as glucocorticoids, used to treat conditions such as asthma and arthritis, can cause bone loss and increase the risk of fractures (19).

Conclusion

Osteoporosis is a complex condition with multiple contributing factors. Age, gender, genetics, lifestyle choices, and medical conditions all play a role in bone health and can contribute to the development of osteoporosis. To prevent or slow the progression of osteoporosis, it is essential to adopt healthy lifestyle habits and seek medical treatment if necessary.

Conflicts of interest

The author declares that he has no competing interests.

Ethical issues

The author has carefully adhered to ethical standards and avoided any potential ethical issues, such as plagiarism, data fabrication, or double publication, during the conduct and reporting of the study.

Funding/Support

None.

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