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Current and future treatments of secondary osteoporosis



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Keywords: osteoporosis secondary osteoporosis treatment Osteoporosis is commonly associated with menopause and ageing. It can, however, also be caused by diseases, lifestyle, genetic diseases, drug therapies and other therapeutic interventions. In cases of secondary osteoporosis, a common rule is the management of the underlying condition. Healthy habits and calcium and vitamin D supplementation are also generally advised. In cases of high risk of fracture, specific antiosteoporosis medications should be prescribed. For most conditions, the available evidence is limited. Special attention should be paid to possible contraindications of drugs used for the treatment of postmenopausal or senile osteoporosis. Bisphosphonates are the most widely used drugs in secondary osteoporosis, and denosumab or teriparatide have been also assessed in some cases. Important research is needed to develop more tailored strategies, specific to the peculiarities of the different types of secondary osteoporosis.

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Practice Points

- In all cases of osteoporosis, secondary causes should be ruled out.
- Treatment of the underlying disease is the cornerstone in the clinical management.
- Evidence on specific treatment of secondary osteoporosis is limited.
- Drugs used in postmenopausal and senile osteoporosis may be used in most cases of secondary osteoporosis.

Research Agenda

- Currently available regimes should be better tested in secondary osteoporosis in terms of efficacy, safety and tolerability.
- Specific treatments for each secondary osteoporosis subtype need to be established.
- More potent drugs are needed to overcome the limited effect of available agents in severe cases.

Introduction

Osteoporosis is a systemic skeletal disease characterised by an increased susceptibility to fracture [1]. Most cases are associated with postmenopause or ageing. In contrast, osteoporosis can develop as a consequence of diseases or pathological situations, and this is labelled as secondary osteoporosis. Their management may differ from idiopathic osteoporosis. In this chapter, we review the specific management of secondary osteoporosis. The causes of secondary osteoporosis are numerous (Table 1), but we focus on the most common and clinically important conditions that constitute a problem for the clinicians.

Table 1Selected causes of secondary osteoporosis (Modified from Reid IR. Overview of pathogenesis In. Rosen CJ Edit. Primer on the metabolic bone diseases and disorders of mineral metabolism, Eight Edition 2013. American Society of Bone and Mineral Research: 357–60).

Endocrine

- Diabetes
- · Hyperparathyroidism
- Thyrotoxicosis
- Hypogonadism
- Secondary amenorrhoea

Digestive

- Celiac disease
- Gastrectomy
- Liver disease
- Bariatric surgery

Bone marrow disorders

- Multiple myeloma
- Mastocytosis
- Leukaemia

Inflammatory disorders

- Rheumatoid arthritis
- Inflammatory bowel disease
- Cystic fibrosis

Drugs

- Glucocorticoids
- Alcohol
- Aromatase inhibitors
- Anti-androgens
- Heparin
- Chemotherapy

Neurologic disorders

- · Parkinson's disease
- Hemiplegia, paraplegia
- · Cerebral palsy

Hereditary disorders

- Osteogenesis imperfecta
- · Marfan's syndrome
- Homocystinuria

Miscellaneous

- Pregnancy/lactation
- · Ankylosing spondilytis
- Hypercalciuric nephrolithiasis
- Depression
- HIV

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