

ROLE OF VITAMIN K IN OSTEOPOROSIS

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The hormonal replacement therapy was considered the first choice treatment for osteoporosis. Afterwards, the pharmacological research introduced three new important drug classes. Around 1995, bisphosphonates have been introduced successfully to reduce the bone loss. In 1999, the sale of raloxifene (Evista) started, the first modulator of the estrogenic receptor (SERM) and, only in the recent period, the FDA has approved the use of the parathyroid hormone Forteo® (teriparatide), the first drug for osteoporosis having anabolic activity. Beside the use of these new drugs, also the Vitamin K is now prescribed, which plays an important role in the bone metabolism.

With regard to the mechanisms of action, the drugs used at present to antagonize bone loss improve the mineralization process, either reducing reabsorption or stimulating bone growth.

Drugs that reduce bone reabsorption decrease the osteoclastic activity, while drugs with anabolic activity stimulate osteoblastic function.

The increase in bone mass and the subsequent mineralization improve bone condition and reduce the risk of fracture.

Fracture resistance depends not only on mineralization but also on a well organised microarchitecture of bone minerals.

Vitamin K plays an essential role in regulating bone microarchitecture. Further evidence suggests that vitamin K inhibits osteoclastic function and stimulates osteoblastogenesis.