

TERIPARATIDE

Teriparatide is a form of parathyroid hormone consisting of the first (N-terminus) 34 amino acids, which is the bioactive portion of the hormone. It is an effective anabolic (promoting bone formation) agent used in the treatment of some forms of osteoporosis. It is also occasionally used off-label to speed fracture healing. Teriparatide is identical to a portion of human parathyroid hormone (PTH) and intermittent use activates osteoblasts more than osteoclasts, which leads to an overall increase in bone.

Teriparatide has been FDA-approved since 2002. It is effective in growing bone (e.g., 8% increases in bone density in the spine after one year) and reducing the risk of fragility fractures. When studied, teriparatide only showed bone mineral density (BMD) improvement during the first 18 months of use. Teriparatide should only be used for a period of 2 years maximum. After 2 years, another agent, a biphosphonate or denosumab should be used in cases of osteoporosis.

Teriparatide is a portion of human parathyroid hormone (PTH), amino acid sequence 1 through 34, of the complete molecule (containing 84 amino acids). Endogenous PTH is the primary regulator of calcium and phosphate metabolism in bone and kidney. PTH increases serum calcium, partially accomplishing this by increasing bone resorption. Thus, chronically elevated PTH will deplete bone stores. However, intermittent exposure to PTH will activate osteoblasts more than osteoclasts. Thus, once-daily injections of teriparatide have a net effect of stimulating new bone formation leading to increased bone mineral density.

Teriparatide is the first FDA approved agent for the treatment of osteoporosis that stimulates new bone formation

Teriparatide cuts the risk of hip fracture by more than half but does not reduce the risk of arm or wrist fracture.

Teriparatide was approved by the Food and Drug Administration (FDA) on 26 November 2002, for the treatment of osteoporosis in men and postmenopausal women who are at high risk for having a fracture. The drug is also approved to increase bone mass in men with primary or hypogonadal osteoporosis who are at high risk for fracture.

