

## Many Osteoporosis Meds Prevent Fractures, But All Perform the Same

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Many medications reduce the risk of bone fractures in people with osteoporosis, but the most commonly used drugs - bisphosphonates- have not been proven more effective than alternatives, according to a new report funded by the Agency for Healthcare Research and Quality (AHRQ), part of the U.S. Department of Health and Human Services.

The AHRQ report compared the effectiveness and risks of six bisphosphonates: alendronate (sold as Fosamax), etidronate (Didronel), ibandronate (Boniva), pamidronate (Aredia), risedronate (Actonel) and zoledronic acid (Zometa). The report also looked at estrogen, calcitonin (a man-made hormone), calcium, vitamin D, testosterone, parathyroid hormone and selective estrogen receptor modulators (SERMs).

Not enough scientific evidence exists to establish whether bisphosphonates are better at preventing fractures than estrogen, calcitonin or raloxifene, according to the report. Some agents, however, such as estrogen and raloxifene (a SERM), can have serious side effects such as strokes, blood clots in the lungs or bleeding in the uterus.

The effectiveness of calcium and vitamin D, meanwhile, may vary according to dosing, how often they are taken and whether the patient taking them is at high risk for a fracture. There is limited evidence to compare the supplements with other therapies for preventing fractures.

The report also found that many osteoporosis patients stop taking their medications as prescribed. Some stop because they experience no osteoporosis symptoms. Others stop because of medication side effects or because dosing is too frequent. This finding was also true for supplements such as calcium. Not taking medications as prescribed increases the chances of bone fractures. Patients who take bisphosphonates in weekly formulations, rather than daily, are more likely to follow prescriptions. An article based on the report will be posted Monday online in the *Annals of Internal Medicine*.

*"As more Americans live longer, osteoporosis will have a greater impact on health and quality of life, said AHRQ Director Carolyn M. Clancy, MD. "This report will help health care providers and patients understand what we really know - and don't know - about the array of available treatments."*

osteoporosis is a skeletal disease that affects about 44 million Americans, especially women who have finished menopause. It occurs when deteriorating tissue reduces bone density in the spine, hip and other areas. Some people with the disease fracture bones, become disabled or experience chronic pain. Overall, about half of women age 50 and older will suffer an osteoporosis-related bone break in their lifetime. About one-fourth of those who fracture a hip will die within a year.

Bisphosphonates, the most commonly used medications for osteoporosis, are non-hormonal drugs that bind to bone to protect against tissue breakdown. AHRQ's analysis found that five bisphosphonates - alendronate, etidronate, ibandronate, risedronate and zoledronic acid - plus calcitonin, parathyroid hormone, estrogen and raloxifene prevent spinal fractures. Evidence also showed that alendronate, risedronate and zoledronic acid, as well as estrogen and parathyroid hormone, prevent hip and other non-spinal fractures.

Direct comparisons, however, have not shown bisphosphonates to be superior to other therapies in preventing bone fractures. No single bisphosphonate has been proven most effective in that class.

The AHRQ report, Comparative Effectiveness of Treatments To Prevent Fractures in Men and Women With Low Bone Density or osteoporosis, summarized the scientific evidence in 101 published articles. It was authored by the Southern California Evidence-based Practice Center at the RAND Corporation in Santa Monica, CA.

Among the conclusions:

Among post-menopausal women with osteoporosis, alendronate, etidronate, ibandronate, risedronate, calcitonin, teriparatide (a form of PTH) and raloxifene reduce fracture risks.

Not enough evidence exists to determine how exercise or taking testosterone compares to medications in preventing osteoporosis-related fractures.

calcitonin, risedronate and teriparatide reduce fracture risks among men.

For people at increased risk of falling, such as those with partial paralysis or Parkinson's disease, fracture risks are reduced if they are treated with alendronate, risedronate or vitamin D.

Risks associated with many osteoporosis treatments are generally moderate or small. Although ulcers in the esophagus were reported in trials of all the bisphosphonates except zoledronic acid, these also occurred in patients not taking these drugs.

Patients who take raloxifene face increased risk of blood clots in the lungs and other areas as well as mild cardiac problems such as chest pains or palpitations. One study found tamoxifen (a SERM) increased the risk of lung blood clots.

In rare cases, dramatic jaw bone deterioration can occur in cancer patients taking intravenous bisphosphonates in large doses.

**Source**

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