

The
Pulse

OSTEOPOROSIS

Osteoporosis is a condition that causes bones to become weak, brittle and very susceptible to fractures. The name osteoporosis means "porous bones" and it is caused by a reduction in the bone mineral density (BMD) accompanied with a disruption in the microarchitecture within the bone. While many consider osteoporosis to be a women's disease, there are a significant percentage of men who are affected by it and according to the Mayo Clinic, after age 75, men and women are equally likely to develop the condition.

Risk Factors

While there isn't a sole factor that leads to osteoporosis, some of the most widely accepted risk factors (according to the Mayo Clinic) include:

- Age – risk of developing osteoporosis increases with age
- Family history – osteoporosis has been shown to run in families
- Gender – 4 out of 5 people with osteoporosis are female
- Race – women of Caucasian and Asian descent are at greater risk
- Size – thin individuals or those with small frames are at greater risk
- Tobacco & Alcohol – both tobacco use and chronic alcoholism have been shown to increase risk

Symptoms

Osteoporosis is often referred to as "the silent disease" as it progresses slowly over time with usually no perceptible signs during the early stages of bone loss. Once bones have been weakened significantly by osteoporosis, the most common signs and symptoms include:

- Back pain – can be very severe if vertebrae fractured or collapsed
- Loss of height accompanied with a stooped posture

- Fractures of the vertebrae, wrists and/or hip (most common sites)

Diagnosis

The most widely accepted screening test to detect osteoporosis is the dual energy x-ray absorptiometry (DEXA) scan. This test is used to accurately determine the bone density in the three areas most likely to develop osteoporosis – hip, spine and wrists. The procedure is quick, simple and painless, and doctors are often able to discuss results and treatment options with their patients within minutes of completion.

Treatment

The most common class of drugs used to combat Osteoporosis are bisphosphonates (e.g. Actonel, Boniva, Fosamax). Bisphosphonates have been shown to inhibit the breakdown of bones, preserve current bone mass and even increase the bone density in the spine and hip thus reducing the risk of fractures. While these are weekly (Actonel, Fosamax) and even monthly (Boniva) bisphosphonates available, the side effects of these drugs can be severe and include: flu-like symptoms, esophagitis, nausea, abdominal pain, ulcers and joint aches. These drugs also require the patient to remain in an upright position for 30 – 60 minutes after dosing. According to a recent Washington Post article, as many as 50% of patients stop taking bisphosphonates within 6 months due to the complicated regimen required and the risk of side effects.

Emergent Treatments

Zoledronic acid (Zometa®) is a treatment that's nearing final FDA approval, where patients will receive a once-yearly 15 minute IV infusion. In the May

3rd issue of the New England Journal of Medicine, findings from a 3 year Zoledronic acid study involving over 7,000 post menopaual women were published. It was found that annual dosings of Zoledronic acid reduced the risk of spinal fractures by 70% and hip fractures by 41%. Zoledronic acid has already been approved by the FDA in 2006 for the treatment of Paget's Disease of the Bone.

Normal bone matrix



Osteoporosis



Charlottesville Medical Research in conjunction with Dr. James Clark will be conducting an Osteoporosis study using Zoledronic acid starting in mid-June.

What is Osteoporosis?

80% of those affected by osteoporosis are post-menopausal women

1.5 MILLION fractures that occur annually are attributed to osteoporosis

44 MILLION Americans have osteoporosis or osteopenia (low bone mass) – 55% of the population above age 50

(Source: National Osteoporosis Foundation)

Charlottesville Medical Research Current and Future Research Studies

- Osteoarthritis of any joint
- Osteoporosis
- Chronic Constipation (starting in July)
- GERD
- Irritable Bowel Syndrome
- Hepatitis C (starting in late August)