

Title: A novel medication for treatment of osteoporosis:
Denosumab

Author: Junqing (Jenny) Xin MS4

Date: 9/9/09

Key words: Osteoporosis, Denosumab, T-score

Abstract:

Denosumab is a novel medication used to prevent fractures in osteoporosis. It has been shown to be effective in reducing vertebral, nonvertebral and hip fractures. This pamphlet is an overview of osteoporosis and provides more information on this new medication.

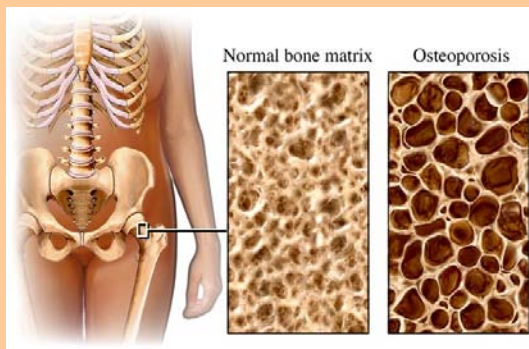
This document was created by a medical student enrolled in the Primary Care Clerkship at the University of Minnesota Medical School as part of the course project. The aim of the project is to present information on a medical topic in the format of a patient education handout. It does not necessarily reflect the views of the University of Minnesota Medical School physicians and faculty. These materials are provided for informational purposes only and are in no way intended to take the place of the advice and recommendations of your personal health care provider. The information provided may no longer be up to date since it has not been reviewed since the date of creation. The information provided should not be used to diagnose a health problem or disease, or as a means of determining treatment. In the event of a medical emergency, immediately contact a doctor or call 911.

WHAT IS OSTEOPOROSIS?

Osteoporosis is the most common bone disease in the United States, affecting an estimated 10 million Americans. Meaning “porous bones,” osteoporosis is a thinning of bone tissue and a loss of bone density, leading to fragile, brittle bones that are easily fractured. Other symptoms include bone pain or tenderness, lower back pain, neck pain, and stooping posture. In severe cases, it can be highly debilitating.

Although osteoporosis typically is known as a women’s health issue, it can also affect men. Risk factors include having a small frame and a family history. Osteoporosis typically strikes after age 50, when there is a drop in estrogen or testosterone. Caucasians and Asians typically develop osteoporosis more often than African Americans and Hispanics.

Generally, symptoms of osteoporosis do not appear until the later stages of the disease. That is why it’s important to talk to your doctor about screening if you are at high risk. A DEXA bone scan can show doctors your bone density.



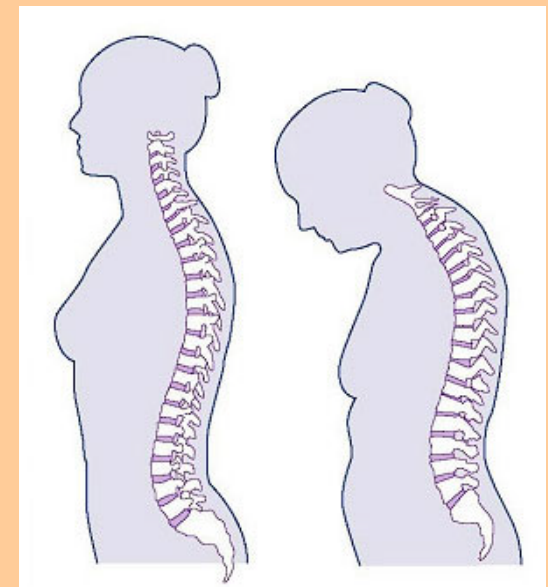
Junqing (Jenny) Xin
FMCH 7600
Period 4

References:

1. Cummings SR, San Martin J, McClung MR, et al. Denosumab for prevention of fractures in postmenopausal women with osteoporosis. *N Engl J Med* 2009;361:756-765
2. Bonura F. Prevention, screening, and management of osteoporosis: An overview of the current strategies. *Postgraduate medicine* 2009; 121(4)

After osteoporosis

Denosumab



NEW TREATMENT TO ASK
YOU DOCTOR ABOUT



TREATMENT OPTIONS

Getting treatment for osteoporosis can:

- Control your pain.
- Stop or slow down bone loss.
- Make bones stronger to prevent fractures.
- Minimize the risk of falls that cause bad breaks.

There are many different options available for treatment. Your doctor can help you determine which one is best for you.

In addition to medication, supplements such as calcium and vitamin D both help make bones stronger. Calcium is a big part of bone mass, and vitamin D helps your body make use of calcium.

Most medications are split into two types—those that prevent bone loss and those that promote bone growth.

Medications that prevent bone loss include:

- Oral Alendronate and Risedronate
- IV zoledronate
- Ibandronate and raloxifene
- Calcitonin nasal spray

Medications that promote bone growth include:

- Teriparatide

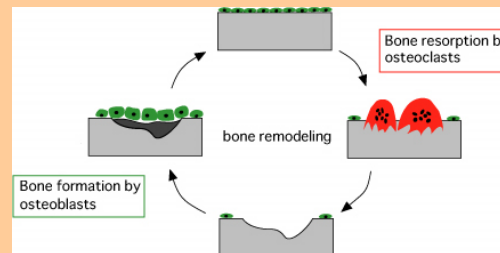
Some of these medications can cause flu-like symptoms or cramps, and are generally not recommended for those with kidney disease.

DENOSUMAB

Denosumab is a new medication that may be very helpful for treating osteoporosis. Doctors have been testing it with women ages 60 to 90 with low bone density. Results are showing that the medication is reducing the number of fractures in these women and increasing bone mineral density.

Denosumab is an antibody that is made in our own bodies. It binds to osteoclasts which are cells that break down bone for bone resorption, a process of losing bone. Resorption is actually a healthy process, working at the same time as bone formation, so that parts of the bone are taken away as new bone is formed. In osteoporosis, however, more bone is lost than new bone is formed. At this point, osteoclasts break down too much bone. Denosumab stops osteoclasts from forming or doing their work.

Women in the clinical trial received a shot with Denosumab every six months for 36 months. More studies are being done to look at how safe it is to use denosumab for a long time.



FOLLOW-UP CARE

If you have been diagnosed with osteoporosis, it's important that you take responsible action to care for your body. This can protect your bones from fractures and help you maintain or improve your quality of life. No matter what course of treatment you choose, make sure you keep doing these:

- Regular visits to your doctor
- DEXA scan before treatment and one year after treatment to see how well it is working or if you should try a new plan. If your treatment is working successfully, your T-scores should stable or increasing. If not, your current treatment may not be right for you.
- Simple, weight-bearing exercise, such as walking, jogging, stair climbing, dancing, hiking, or tennis for 20-30 minutes 3-4 times a week
- Stop smoking and alcohol use
- Getting your eyes and ears checked to prevent falls

