

## **CALCIUM SUPPLEMENTATION AND VITAMIN D THERAPY**

Hormonal therapy taken for the treatment of prostate cancer is known to cause changes in bone structure and loss of calcium – a condition known as osteopenia which may lead to a more severe condition of significant bone loss called osteoporosis. Hormonal therapies in men create a situation somewhat akin to that in post menopausal women. With long-term hormonal treatment, bone loss may predispose the patient to fractures, particularly in the hips and spine. Such bone loss can be diminished by increasing the intake of Vitamin D and calcium. In addition, regular exercise, weight conditioning, and cessation of smoking will help to decrease bone loss.

We advise that patients receiving hormonal therapy for prostate cancer receive 500 to 1000 milligrams of calcium supplement (calcium carbonate, calcium malate, or calcium gluconate) as well as 600 to 1200 units of Vitamin D each day (vitamin D3 , also called cholecalciferol). Vitamin D is necessary for the intestine to absorb dietary calcium. Both calcium and vitamin D supplements are available over the counter. One 8-oz glass of milk provides about a tenth of the daily requirement of calcium. TUMS is another inexpensive source of calcium supplementation.

In order to monitor adequate delivery of vitamin D supplementation, blood levels of vitamin D may be requested in order to adjust the vitamin D dose. In addition, to monitor the extent of osteopenia or osteoporosis, and the response to therapy, bone mineral density studies may be recommended

Patients with a history of kidney stones should discuss calcium and vitamin D supplements with their urologist prior to beginning therapy.

In addition to calcium and vitamin D, a drug called alendronate sodium (Fosamax) may also be prescribed. This drug facilitates an increase in bone mass and reduces the incidence of fractures. It is available as the plain medication and as “Fosamax plus D,” which includes vitamin D supplementation. The drug is administered weekly and should be taken in the morning with 6-8 oz of water, before any food is taken. Patients should remain upright for at least 30 minutes following administration.

Rarely patients will experience bone, joint, or muscle pain with Fosamax therapy, and osteonecrosis of the jaw has also been reported, usually associated with a dental extraction or infection.

An intravenous medication, zoledronic acid or Zometa, also works to supplement bone resorption of calcium, and may be suggested in certain cases of advanced cancer.

A monoclonal antibody, denosumab, and a selective estrogen receptor modifier, toremifene have both been tested in phase 3 trials and each has shown to be effective in reducing osteoporosis and fractures secondary to this process. Both agents are currently being evaluated by the FDA for approval