Vitamin D Does Not Prevent Falls, Calcium Does Not Prevent Fractures - a $2 Billion Waste Of Money

By Chuck Dinerstein — April 17, 2018

Fractures due to the declining health of our bones places a substantial burden on patients, at one year 60% require assistance with daily living, 40% are unable to walk independently, and 20-30% are dead. It is a big deal and the only treatable risk factors for reducing the number of falls and improving bone mass. That is the idea behind Calcium and Vitamin D supplements. And there continues to be increasing evidence that these supplements are just not effective.

The US Preventative Services Task Force is an independent voluntary group who develop evidence-based guidelines for preventative care. This week they updated their previous recommendations regarding the use of Calcium and Vitamin D supplements for patients who have no evidence of bone loss, osteoporosis. The latest review strengthens their prior assessment, Calcium and Vitamin D provide no health benefit for this large group of asymptomatic patients.

The studies review involve patients who have no evidence of osteoporosis, Vitamin D deficiencies, on long-term medications like steroids that are known to weaken bones or individuals with prior fractures. The patients lived in the community and were not institutionalized. The group found eight randomized controlled studies to review. Concerning the benefit of these supplements they found:

- Four studies on daily Vitamin D (400 international units) found no "significant difference" in fractures. Two studies are higher doses were inconclusive
- Two studies of daily Calcium (1200 and 1600mg) found no "significant difference" in fractures but were felt to be underpowered in detecting a difference
- Two studies looked at a combination of Calcium (1000mg) and Vitamin D (400 international units) versus placebo. The larger study found no "significant difference" in fractures. The
smaller study found a difference for vertebral fractures but not hip fractures

They also considered nine randomized controlled studies of the harm from taking Vitamin D and Calcium supplements.

- Vitamin D with or without Calcium did not affect mortality although one study, of the three reviewed, indicated an increase in cardiovascular deaths.
- Taking Calcium by itself, over 2 to 4 years did not increase the risk of kidney stones, but in combination with Vitamin D resulted in an 18% increase.
- The most commonly reported adverse effect was constipation

Based upon the finding of no benefit the task force concluded that for men and pre-menopausal women who live in the community without osteoporosis or an increased risk for falls, that Vitamin D and Calcium supplements provide no net benefit. When they factored in the increased incidence of kidney stones in long-term use, the recommendation was extended to post-menopausal women. The only caveat that higher doses of both supplements could be studied.

People who fall are more likely to break their hip or as I have written about previously may have broken their hip and then fallen. In 2012 the task force thought that Vitamin D might confer some benefit from preventing falls, but “upon further review” the now believe the preponderance of evidence is no benefit in Vitamin D preventing falls. What could be the biological basis? In its place, they recommend exercise interventions in those over age 65, but again I not so sure that the intervention is as important as just getting exercise which entails less planning about when to get to your "intervention" and less cost as you figure out the co-pay and deductible.

Two editorials accompany the recommendations pointing out their concerns with the studies used as the evidence base. But one does raise an important point, the role of patient compliance in following “doctor's orders,” an especially difficult practice in preventative strategies where a good outcome is no outcome at all. But for these recommendations, which indicate that Vitamin D and Calcium provide no benefit and perhaps some risk in a defined population are easy to follow. Just stop taking these supplements and then we could use the estimated $2 billion for something useful. Think of it as a tax rebate.

Source: Vitamin D, Calcium or Combined Supplementation for the Primary Prevention of Fractures in Community-Dwelling Adults US PSTF Recommendation Statement JAMA DOI:10.1001/jama.2018.3185

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