Updates on Osteoporosis and Metabolic Bone Disease

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Title: Secondary Prevention of Fractures: Implementation of a Fracture Liaison Program
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Abstract: Osteoporosis resulted in about 2.1 million incident fractures annually in the U.S. in 2005. The total cost of treating those incident fractures was $17 Billion, or $19 Billion with inclusion of the cost of treatment of prevalent fractures. The total cost of treating 3 million fractures in the U.S. in 2025 will be $25.5 Billion, or $28.5 Billion with inclusion of the cost treatment of prevalent fractures. Osteoporosis is the tenth leading cost to medicare. More importantly, 50% of these patients do not regain prefracture status for acitivities of daily living, and 50% cannot walk without assistance. An important fact about an osteoporotic fracture is that it is a “sentinel event”, meaning it is a sign that fracture risk is increased. For example, the risk of a second hip fracture is 2.3% per year in the absence of treatment of an incident fracture. Further, the annual risk of a hip fracture is 17.4% per year after an incident vertebral fracture in the absence of a diagnosis of the underlying cause, osteoporosis, and its treatment. Treatment will reduce these complications by about 50%, and the near future holds promise of reducing them much more. The sad fact is that in the past decade no more than 23% of patients discharged from the hospital after treatment for an osteoporotic fracture (surgery in most cases) receive a diagnosis or treatment. Further, a study has shown that in 664 women with T-Scores <-2.5, 53% had a secondary etiology by history; in the 173 with no history of secondary etiologies, 32% had previously unrecognized factors. Thus, post hospital care of patients treated for an osteoporotic fracture should include screening for secondary causes, and only about 23% of them do have such a workup, mostly consisting in laboratory tests. Nearly 80% of osteoporotic fracture cases do not get screening or treatment. Thus we need to establish systematic follow-up care for these patients, much like we do for patients who have been treated for cancer.

The problem has been that we do not have systems in place to provide the proper post-hospital care of fracture patients. The patients tend to be discharged without a follow-up plan, and are lost to treatment. This has been the reason for the establishment of the “Fracture Liaison System”, a project of the National Osteoporosis Foundation with its creation of a subdivision called the “National Bone Health Alliance”. The stimulus behind this initiative was experience reported by Kaiser Permanente in Southern California and the Geisinger Health System. Kaiser in Southern California reduced their hip fracture numbers from ~3,000/year in 2002, to ~2,000/year in 2007. Their current annual savings in medical costs from further reduction in hip fracture numbers is ~$58,000 million in their insured population of about 16 million. Geisinger Health reports similar savings.

The current FLS system is patterned after the Kaiser experience. This is based on training of FLS coordinators that join with a hospital’s orthopedic and primary care physicians to insure post hospital care, see that patients obtain a workup for secondary causes, see that those identified are treated, that OT and PT are consulted, and that vitamin D and calcium supplements are used. In open systems this is a bit difficult. It requires training the coordinators, and support and enthusiasm from hospitals and health practitioners. The NOF/NBHA has a training program and certification.

The FLS system holds promise of significant reductions in osteoporotic fractures.