

Balance Dysfunction and Osteoporosis: A Prevalence Study of Balance Dysfunction Causes

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Abstract: Patients with osteoporosis often present with balance dysfunction. As much as 90% of all hip fractures and nearly all wrist fractures are due to falls. Healthcare practitioners need to give more attention to determining the reasons for balance dysfunction, particularly to sensory-based causes, in the osteoporosis population.

A retrospective analysis of patients diagnosed with osteoporosis and balance dysfunction at the United Osteoporosis Centers (UOC), a multidisciplinary osteoporosis specialty center, was conducted. Data collection involved determining the total number of osteoporosis consults, percentage of patients with balance dysfunction and analysis of the types of balance dysfunction: Balance dysfunction type was determined by several categories: center of gravity, vestibular, visual, somatosensory, motor control or adaptation dysfunctions. Balance dysfunction was assessed with Computerized Dynamic Posturography (CDP) and the Bone Safety Evaluation© (BSE), a performance-based assessment tool that assesses balance, spinal compression forces, strength and flexibility in persons with osteoporosis. Information obtained on both tools was synthesized to assess the prevalence of patients with kyphosis and balance dysfunction as well as functional impairment and type of balance dysfunction. Osteoporosis consults at UOC over this time totaled 691. Of the patients who received a consult, 47% were referred for a BSE and subsequent CDP testing if balance dysfunction was suspected. When balance dysfunction was found, 77% of the time the cause was due to visual, vestibular or somatosensory dysfunction. The remaining data is presented in Table 1 [and 2 on poster above]. The prevalence of balance dysfunction in the osteoporosis population has been explored, and the need for assessment and management of balance dysfunction is under-addressed. The cause of balance dysfunction in the osteoporosis population is a multifaceted problem needing a comprehensive approach. Of particular concern is the prevalence of sensory-based balance dysfunction accounting for three-fourths of cases. Effectively screening patients for cause of balance dysfunction, particularly sensory-based causes could facilitate reduction of fall risk and subsequent fractures.