



Management of Bone Metastatic Disease in Geriatric/ Elderly Patients

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Introduction

An increased number of elderly patients were diagnosed with cancer, thus affecting their increased life expectancy. Loss of bone mineral density has been a major problem in these patients as they are at an increased risk of skeletal-related events (SREs) because of decreased bone mineral density. As elderly patients are more vulnerable to intraosseous device implantation, surgery, and radiotherapy (RT) because of SREs, careful protective measures should be considered, particularly during chemotherapy.[1,2] In addition to preventing SREs, antiresorptive treatments may also delay disease progression in bone and increase the quality of life and survival by direct and indirect antitumor activity.[1] Although the data of bone resorption inhibitors (BRIs) in elderly patients are limited, patients aged >65 years can receive full indicated doses of bisphosphonates and denosumab unless hazardous levels of hypocalcemia are reached. [2,3] Serum calcium levels should be monitored; oral calcium and vitamin D should be supplemented to meet daily requirements. In addition, advanced aging is associated with renal impairment caused by hypertension or diabetes or a physiologic decrease in the glomerular filtration rate. The regulation of dosage according to creatinine clearance is needed for bisphosphonates; however, no regulation is required for denosumab which is independent of renal or hepatic function.[2] In addition, optimal hydration should be recommended for elderly patients while taking bisphosphonates. The International Society of Geriatric Oncology recommends routine oral examination and treatment of dental problems before receiving bispho-

sphosphonates as there is a risk of osteonecrosis of the jaw. [4] No data exist on bisphosphonate use in patients with an estimated survival of less than 3 months, so it should be used only in selected cases with a terminal disease with hypercalcemia.[4]

Another problem is polypharmacy due to comorbid conditions that can cause drug interactions with BRIs. Moreover, nephrotoxic drugs (i.e., antidiabetics, lipid-lowering agents, or chemotherapy) should be avoided from using simultaneously with bisphosphonates. Clinical conditions, including pain and hypercalcemia of malignancy, should also be treated.

Palliative RT provides relief from pain in 80% of cases and improves the quality of life and functional mobility in bone metastatic disease. Elderly patients showed the same response to RT as younger patients in symptomatic bone metastatic disease.[5] Responses to single or multiple fractions of RT were not affected by older age regarding pain relief and toxicity; however, comorbidities and life expectancy had an effect on selecting the shorter treatment.[6] The physiological changes with aging may change the pharmacokinetics of opiates and lead to impaired metabolism and increased reserve of active drugs such as opiates. As related adverse events of other treatment options were observed, such as renal failure and opioid-related events, palliative RT may be more beneficial in the older population.

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