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## Literature Abstract

## Risk of osteonecrosis in patients taking bisphosphonates for prevention of osteoporosis: A systematic review and meta-analysis

This systematic review evaluated the risk of osteonecrosis (ON) of other sites or osteonecrosis of the jaw (ONJ) among noncancer patients taking bisphosphonates (BPs). The authors searched studies published in PubMed, EMBASE, and Cochrane Library from database inception to December 2012. The inclusion criteria were: (1) BPs as an exposure and ON as an outcome, (2) adult noncancer patients, and (3) cohort or case-control studies with an appropriate control group. Twelve studies were included in the meta-analysis, and they consisted of 2,652 cases and 1,571,997 controls. Results from all 12 studies showed significant risk of ON (odds ratio [OR] = 2.32). For the seven studies with adjusted effect estimates, the OR for ON was higher (2.91), with improved heterogeneity. The OR of ON with oral BPs was 3.15, while that of intravenous (IV) BPs was 47.8. The authors cited the small number of noncancer patients receiving IV BPs as reason for the exaggerated OR of ON for IV BPs. The result also indicated that the use of BPs resulted in higher risk of ONJ (OR = 2.57) than ON of other sites (OR = 1.79). The authors concluded that although the use of oral BPs increases the risk of ONJ among noncancer patients with osteoporosis, BP-related ONJ remains a rare complication.

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