Tidak Ada Judul dalam Bahasa Indonesia

Sri Angky Soekanto, author

Abstrak

The Effect of Bisphosphonate on The Osteoclast-Like Cell Formation In A Mouse Bone Marrow CultureBisphosphonates are reported to have an inhibitory effect on bone resorption in vivo and in vitro. The present study examined the effect of bisphosphonate on the formation of osteoclast-like cells in vitro. When mouse bone marrow cells were cultured for 8 days with 10$M la, 25-dihydroxyvitamin D3 (la, 25(OH)2 D3) numerous clusters of mononuclear and multinucleated cells formed, which stained positive for tartrate-resistant acid phosphatase (TRAP-positive). la, 25(011)2 D3 is known to stimulate osteoclast-like cell formation in a mouse bone marrow culture. Adding 1-hydroxyethylidene-l, 1-bisphosphonate (BEEP) inhibited the increased formation of osteoclast-like cells stimulated by this stimulant. A time-course experimental model showed that the number of osteoclast-like cells decreased slightly when drugs were given early in the culture period and decreased markedly when the drugs were given later or continuously in the culture period.

These findings suggested that bisphosphonate had an effect on mature stage and significantly inhibit bone destruction by inhibit osteoclast-like cells formation. The amount of PGE2 production stimulated by la, 25(011)2 D3 was dose dependently higher with BEEP and 3-amino-lhydroxypropylidene-1, 1-bisphosphonate (APD). Showing that PGE2 production is high at the end of culture when the cells are going to undergo apoptosis. This showed in part, the known bone-resorbing activity of these agents.