Comparative use of two different sources of mesenchymal cells in the experimental treatment of BRONJ.

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Osteonecrosis of the jaw occurs when bone is exposed and bone cells and marrow start to die in a circumscribed area of the maxilla or the mandible. Although the first case was reported over a decade ago, the pathophysiology of the disease has not been fully elucidated. Lately, a large number of cases were diagnosed in patients that had been treated with bisphosphonate, but nowadays the same pathology is being associated with other antiresorptive (denosumab) and antiangiogenic therapies. Mesenchymal cells are able to produce osteoblasts. They have also anti-inflammatory and immunomodulation properties as have been demonstrated in several studies. Cell therapy seems to be a good choice in the treatment of the osteonecrosis of the jaw, however the best source to obtain these cells is still not discerned. In this project, two different sources of mesenchymal cells have been compared using a well-established osteonecrosis experimental animal model. In one hand, mesenchymal cells seeded onto porous matrix autologous tricalcium phosphate. In the other hand, mesenchymal cells derived from adipose tissue with or without osteogenic predifferentiation by BMP2. Preliminary histological analyses have shown encouraging results. Signs of bone regeneration have been confirmed in the two animal groups treated with mesenchymal cells from both sources, and not in the control group. Greater bone regeneration has been revealed in the bone marrow mesenchymal cells group.

Referencias