

Bone morphogenetic protein and its option as an alveolar cleft treatment [Proteína Morfogenética Ósea y su Opción como tratamiento de la fisura alveolar]

Uribe F.

Cantín M.

Alister J.P.

Vilos C.

Fariña R.

Olate S.

Bone morphogenetic protein (BMP) is an endogenous protein that has shown significant effects in the promotion of bone formation. BMP also has been described in the reconstruction of traumatic and pathological bone defects, including alveolar cleft, alveolar ridge augmentation, maxillary sinus elevation, and applications in post-extraction alveolus graft, and peri-implant surgery among others. Despite the advantages associated with the use of BMP, currently is applied in combination with collagen matrices, which has certain properties such as low mechanical resistance and a high burst initial release that diminish its effectiveness in bone formation. In this context, the development of novel systems with greater mechanical resistance and prolonged release of BMP, that lead to chemotaxis of mesenchymal cells, following by its differentiation to osteoblasts represents a major challenge that holds outstanding clinical potential for the stimulation of bone formation. In this paper, we describe the use of BMP for the reconstruction of alveolar clefts, and its advantages being administrated in polymeric microparticles as sustain release system with promising applications in the stimulation of bone formation. © 2017, Universidad de la Frontera. All rights reserved.

Alveolar cleft

Bone morphogenetic protein

Microparticles

RhBMP-2

