



15841 POSTER DISPLAY CLINICAL RESEARCH - SURGERY

What to expect from the use of regenerative medicine in two stages sinus lift – A systematic review

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Background: Due to bone loss and consequent sinus pneumatization, sinus lift procedure is usually required in order to allow rehabilitation with dental implants. Considering that regenerative medicine is currently still a controversial approach, especially regarding the cost-effectiveness safety and the uncertain outcomes, it is mandatory to find literature evidences of regenerative medicine in two stages sinus lift procedures through lateral window in humans.

Aim/Hypothesis: The research question of this systematic review was- iHow the use of regenerative medicine in two stages sinus lift procedures in humans can influence the amount of bone gain through radiological and histological histomorphometrically properties, as well as, the implant survival rate î.

Material and Methods: An extensive search for journal publications was performed by using the keyword and or MeSH terms combinations iaxillary augmentation and (regenerative medicine OR stem cells OR cell therapy)î and isinus lift and (regenerative medicine OR stem cells OR cell therapy)î at Pub-med, Embase, Scopus, Web of Science, Scielo and Cochrane library databases. The selected articles were written in English, Portuguese, Spanish, Italian, German or French, and published until 19 of April 2019. Inclusion criteria were implant osteointegration, radiographic, histologic and or histomorphometric analysis, clinical studies in humans using regenerative medicine. Furthermore, only randomized or controlled clinical trials (RCT or CT) were included in this systematic review. Fourteen published studies (7 RCT and 7 CT) with a total of 207 patients and 278 sinuses were considered eligible for inclusion in the present systematic review.

Results: Four different cells technics were observed- Mesenchymal stem cells (MSC), Mandibular periosteum-derived cells; PepGen P-15 Putty; Recombinant human bone morphogenetic protein-7 (rhBMP-7). In 12 studies, histomorphometrically analysis were reported. The bone volume with rhBMP-7 was $34.21\% \pm 6.7$ versus $62.88\% \pm 8.4\%$ without rhBMP-7 after 4 months ($P < 0.05$). Four studies found histological statistical significance differences in favor of the MSC after 3 and 6 month and for the periosteum-derived cells and Pepgen P-15 evaluated at 3 months. Two RCT split-mouth design did observed statistically significant differences between groups. Six trials included a radiological evaluation part. The use of MSCs the radiological evaluation shown a bone gain (mm)- 9.8 ± 1.78 at 3 months; 8.7 ± 3.3 at 4 months; 7.8 ± 2.8 to 8.5 ± 1.44 at 12 months. In 11 study's the implant survival rate was reported. For MSC range between 91%-100% and 100% for PepGen P-15 and mandibular periosteum-derived cells.

Conclusion and Clinical Implications: Although there are encouraging literature results, regenerative techniques require a careful case-by-case evaluation before its use. Limitations of regenerative techniques include potential biological risks, the use of general anesthesia, second surgical side, increasing costs and recovery time, adding to the difficulty and sensitiveness of the techniques that are required for some of these cells technics manipulations. Further clinical trials are needed to achieve a more accurate evaluation.