



Minimal invasive surgical techniques for regeneration/reconstruction of intrabony defects: Systematic review and meta-analysis of randomized controlled clinical studies

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Background

Technical innovations have been advocated in an attempt to minimize the invasiveness of periodontal regenerative procedures while maintaining or enhancing their regenerative performance. Minimal invasive surgical techniques (MIST) that adopted a limited flap extension without vertical releasing incisions were proposed to minimize the surgical impact on vascular supply, enhance revascularization, and optimize the primary intention healing and wound stability.

OBJECTIVE

This systematic review aims to answer the following question, Does the implementation of Emdogain alone versus a combination of any regenerative material yield better results in the treatment of intrabony defect regarding clinical outcomes (clinical attachment gain, pocket depth and gingival recession)

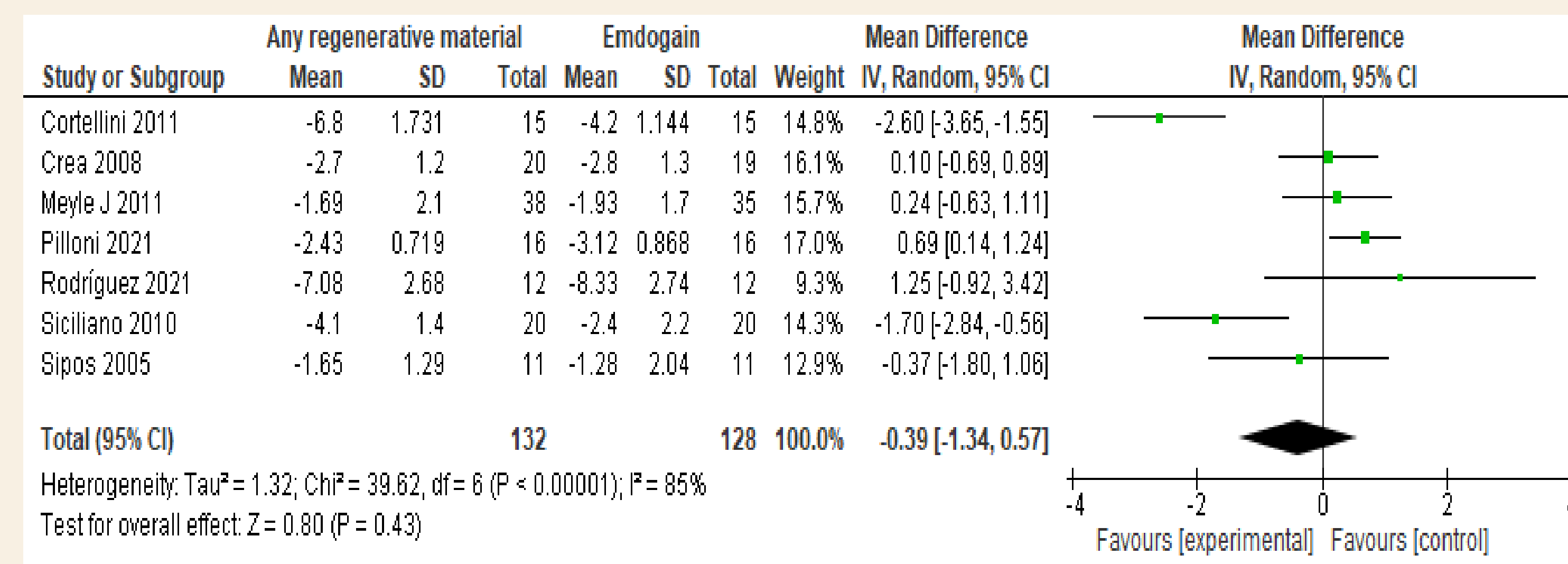
METHODS

MEDLINE (PubMed), Web Of Science, Cochrane library and Scopus databases were searched for entries up to 11 August 2023. Focusing on studies that managed intrabony defect with MIST and using EMD or combination of any regenerative materials. The primary outcome was gain of clinical attachment (CAL). The secondary outcome were change in probing depth (PD) and change in gingival recession (REC). Finally, a hand search of the Journal of Dental Research, the Journal of Clinical Periodontology, the Journal of Periodontology, the Journal of Periodontal Research, The International Journal of Periodontics and Restorative Dentistry was performed. Weighted means and forest plots were calculated for CAL gain, probing depth (PD), and gingival recession (REC).

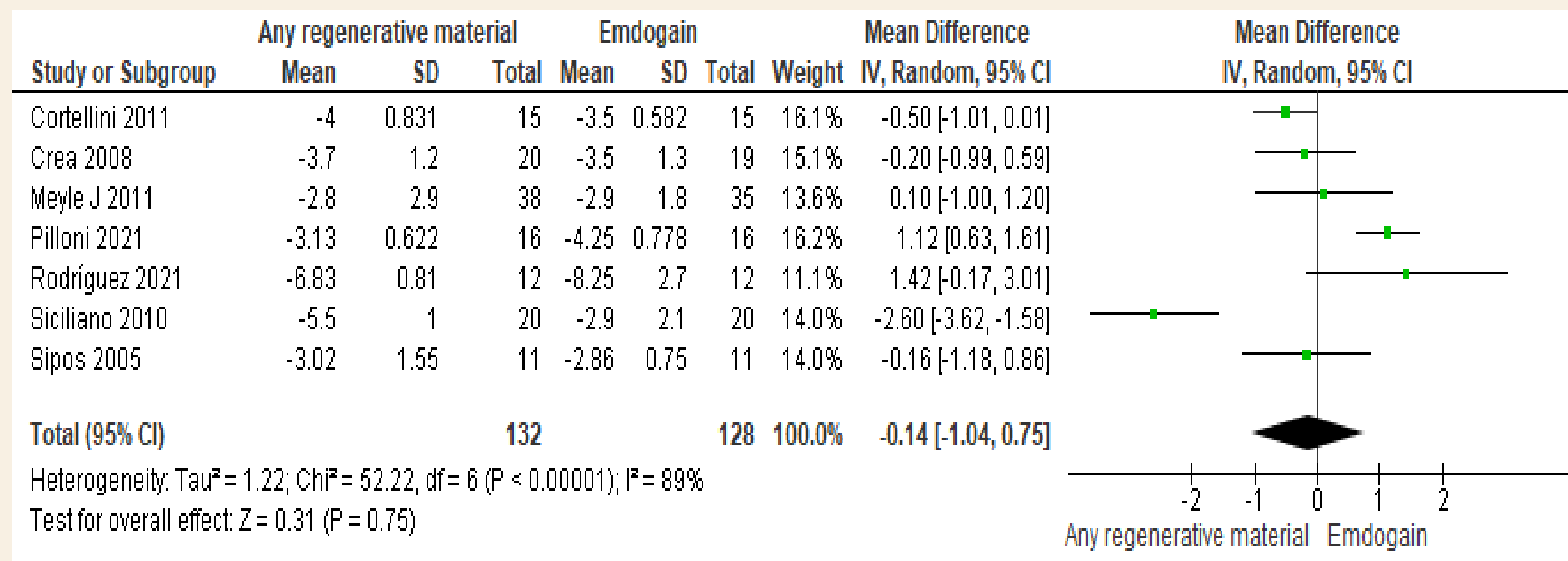
RESULTS

Seven studies reporting on 260 patients were selected for the analysis. The result of the meta-analysis showed that there is no significant difference between the use of Emdogain alone and a combination of any regenerative material for the treatment of intrabony defect regarding CAL gain, PD and gingival recession. Mean difference= -0.39;95%CI(-1.34,0.57), -0.14;95%CI(-1.04,0.75)and -0.14;95%CI(-0.36,0.07), respectively.

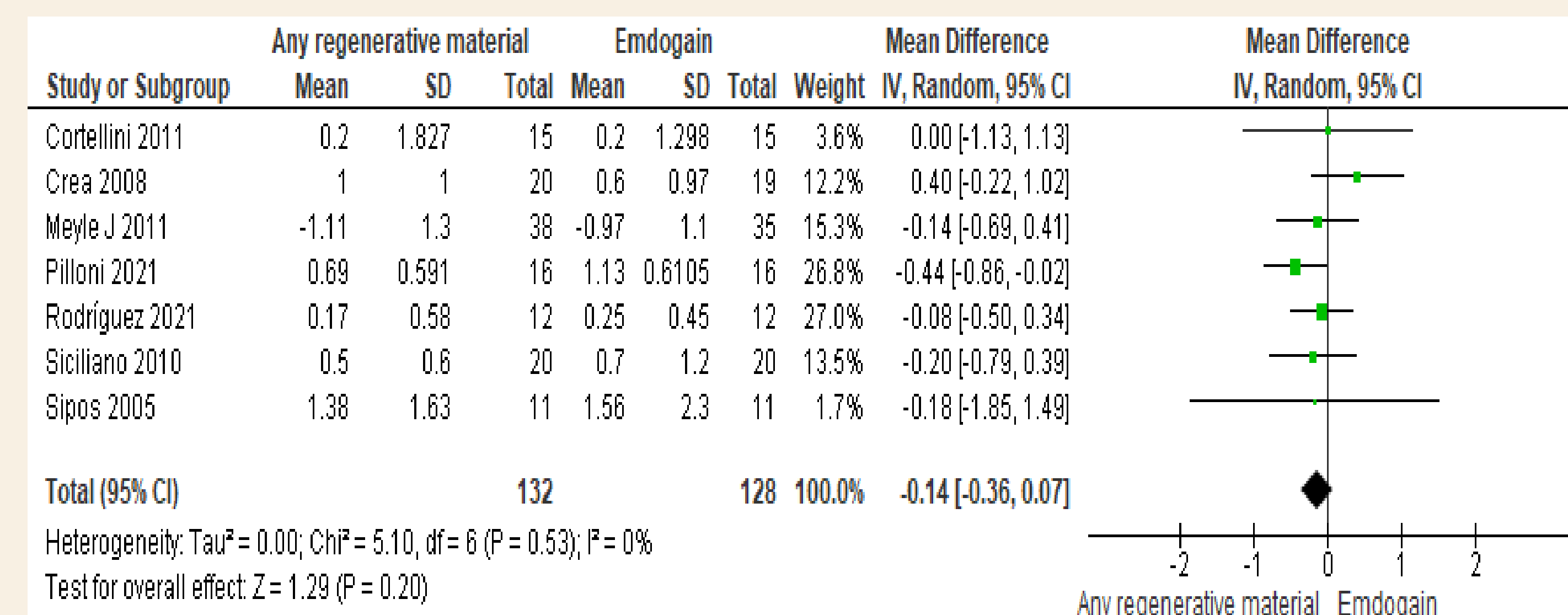
CAL



PD



REC



CONCLUSIONS

Periodontal regenerative/reconstructive therapy with MIST in intrabony defects results in a reduction of PD and larger CAL gain in both groups. With limitation to this study, the present results showed that there is no statistically significant difference between the Emdogain alone or a combination of any regenerative material when implemented with the MIST surgical technique

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