

Theravex Technology: A Systematic Review and Meta-Analysis of Its Effectiveness in Oral Surgical Procedures.

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INTRODUCTION & AIM

Optimal healing following oral surgical procedures, such as tooth extraction and dental implant placement is paramount for functional and esthetic restorability. Building on the emerged evidence, this systematic review aims to assess the effects of TTech (Formerly known as Bone Bioactive Liquid “BBL”), compared with conventional management or alternative interventions, on clinician-reported and patient-reported outcomes in patients undergoing oral surgical procedures.

METHOD

A comprehensive literature search was conducted across five databases for studies published up to March 2026. Eligible studies were selected according to predefined PICO. The outcomes were analyzed using the random-effects model on Rstudio with results reported as risk ratios (RRs) and 95% confidence intervals (CIs), and a p-value of less than 0.05 was set as a significant result. Trial Sequential Analysis (TSA) was conducted using TSA software to evaluate the required information size (RIS) and control for random errors.

RESULTS

Four studies encompassing 526 treated sites were included in this systematic review. Meta-analysis of post-operative healing demonstrated a significant benefit of TTech, with a RR of 7.19 (95% CI: 2.24–23.13; $p = 0.0009$). These findings were further validated by TSA, which confirmed robustness by crossing the TSA boundaries. Studies consistently showed that TTech-treated implant surfaces achieved significantly greater bone-to-implant contact (BIC), increased inter-thread bone area (ITBA), and reduced crestal bone loss (CBL) compared with conventional surfaces. Clinically, TTech was associated with improved implant stability, enhanced osseointegration on radiographic assessment, accelerated soft tissue healing, and a marked reduction in postoperative pain. Compared to chlorhexidine (CHX) mouthwash, TTech was associated with earlier pain relief and superior early wound healing, highlighting its potential to optimize both hard and soft tissue recovery following implant therapy.

Figure 1- Pairwise meta-analysis results of the included clinical studies.

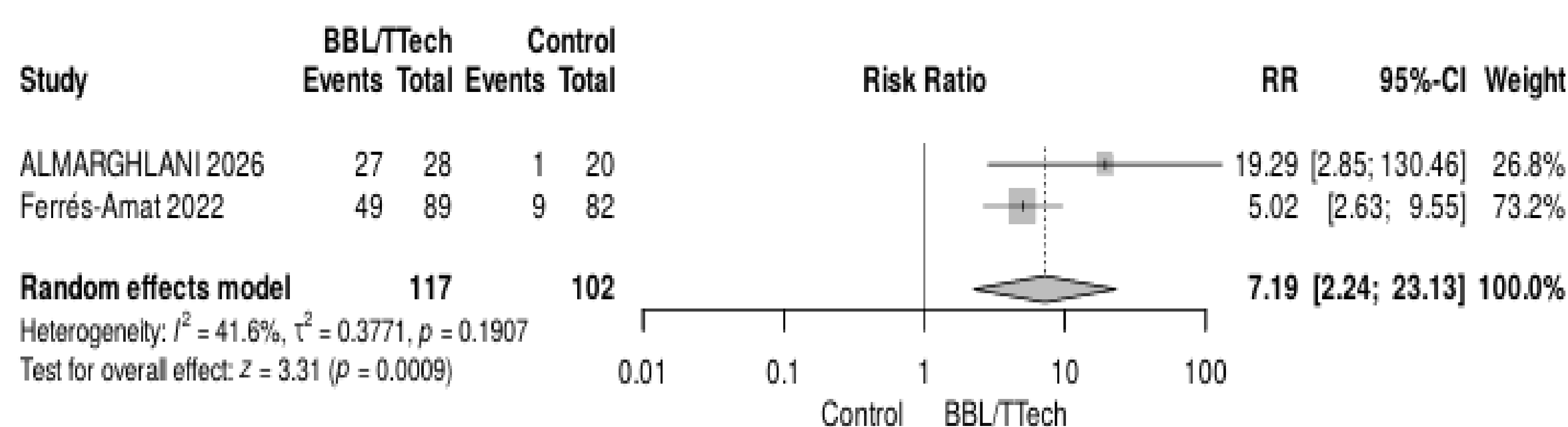
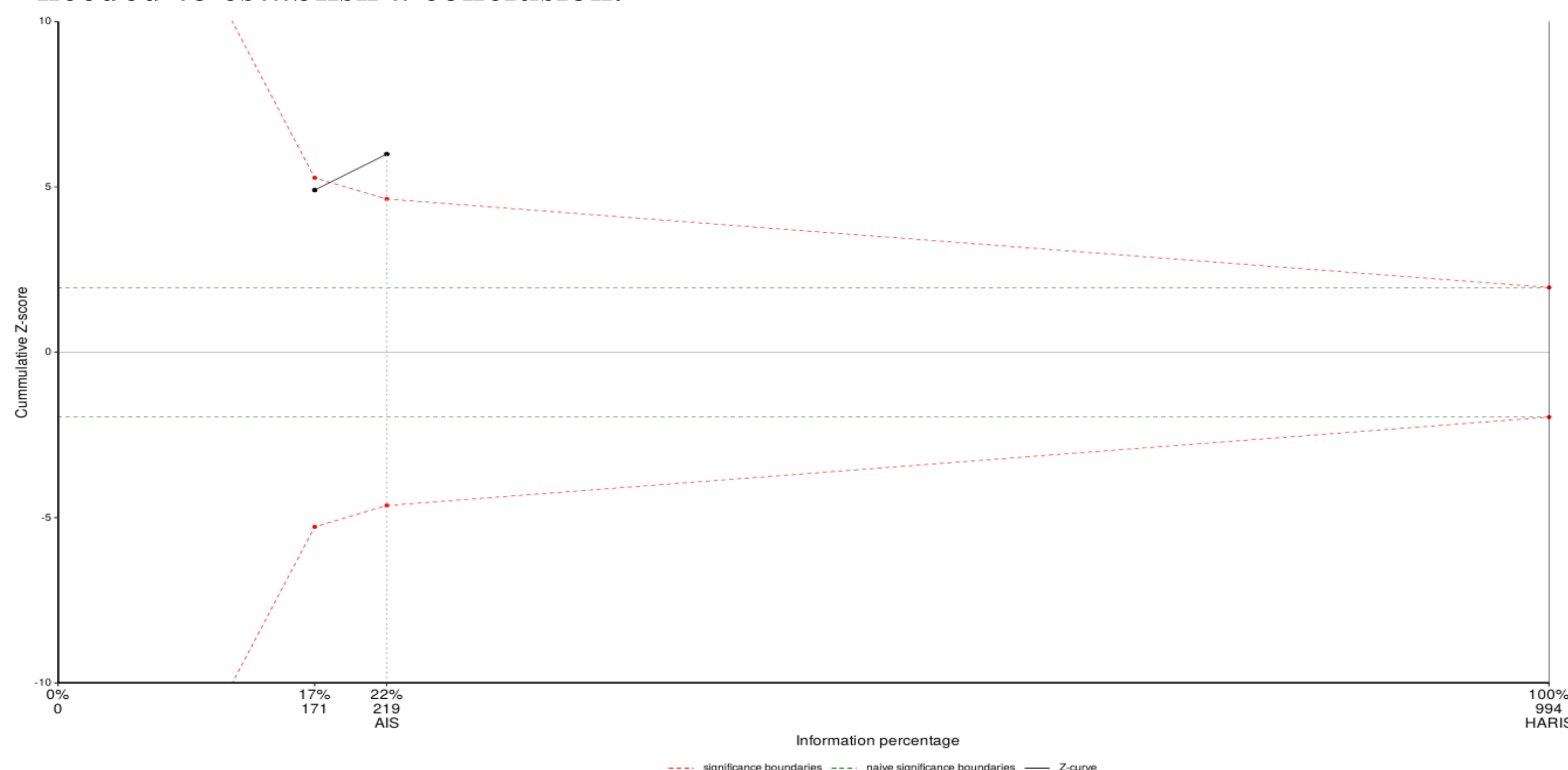


Figure 2- Trial sequential analysis of the results of meta-analysis. Based on the Z-score plot, the total number of samples did not reach the optimal number, and more research is needed to establish a conclusion.



CONCLUSIONS

Within the limitations of this systematic review, TTech is consistently associated with improvements in early wound healing and reductions in postoperative pain. However, the overall evidence base remains limited, and the certainty of evidence ranges from moderate to very low. Further high-quality, independently conducted randomized controlled trials with extended follow-up are required to confirm these findings and to establish the long-term clinical role of TTech in oral surgery and implant dentistry.

Figure 3. The proposed mechanism of action of TTech around implants.

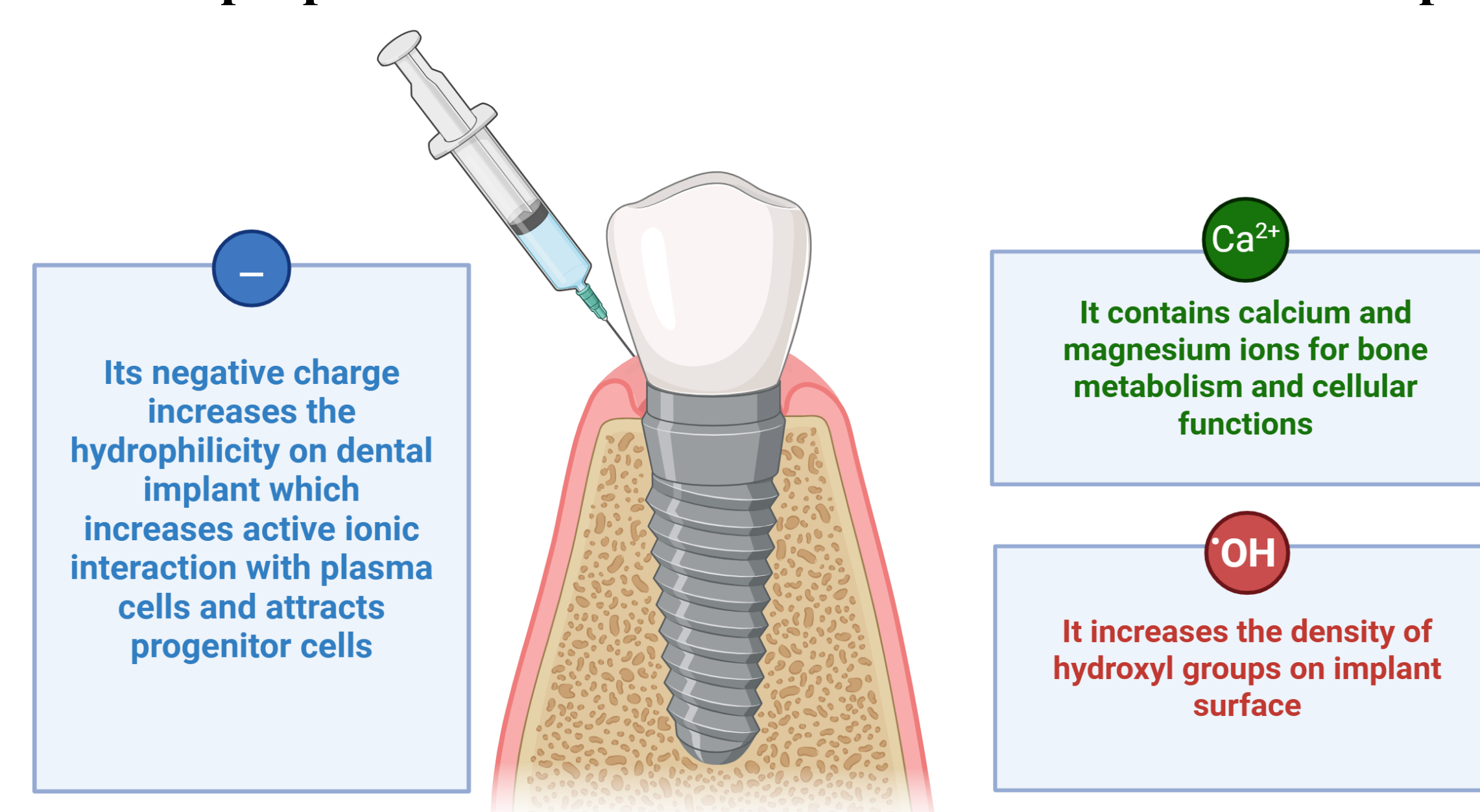


Figure 4. The proposed mechanism of action of TTech at the extraction sites.

