

OP27 ARE SELF-LIGATING BRACKETS WORTH THE EXTRA-MONEY? AN UPDATED META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS AND SPLIT-MOUTH DESIGN STUDIES

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**AIMS:** To test the null hypothesis that there is no difference in treatment efficiency between fixed orthodontic therapy undertaken with conventional compared to self-ligating brackets.

**MATERIALS AND METHOD:** An electronic search was performed in four databases (PubMed, Web of Science, Cochrane Oral Health's Group Trials Register, Cochrane Central Register of Controlled Trials) up to April 2015 with supplemental hand searching of the references of retrieved articles. The search was strictly restricted to randomized controlled trials (RCT) and split-mouth design studies (SMD). Review authors screened the search results, extracted data and assessed risk of bias according to the Cochrane Handbook for Systematic Reviews of Interventions (4.2.6.), used mean differences and 95 per cent confidence intervals (95% CI's) for continuous outcomes and odds ratios and 95% CI's for dichotomous outcomes. RCT and SMD were initially processed in the meta-analysis as two sub-groups according to Lesaffre *et al.* (Statistics in Medicine, 2009) and subsequently combined with the R project for statistical computing software.

**RESULTS:** Out of the initial 76 retrieved papers, 23 RCT and six SMD ultimately met the inclusion criteria. The following variables were scrutinized: treatment duration, number of visits, occlusal outcome, mandibular alignment efficiency, transverse dimension changes, mandibular and maxillary incisors position modification, time required for space closure, anchorage loss, bracket failure rate, perception of discomfort and self-prescription of analgesics during the initial phase of treatment and pain experience during wire insertion or removal, time to ligate in or to untie an archwire. There was no significant difference in treatment efficiency between conventional and self-ligating brackets for all those variables. Two exceptions to this statement could be identified: significantly greater discomfort was experienced during rectangular archwire insertion and removal with SmartClip<sup>TM</sup> compared to conventional Victory<sup>TM</sup> brackets, and ceramic In-Ovation C<sup>TM</sup> attachments were quicker to untie and ligate than conventional Clarity<sup>TM</sup> brackets.

**CONCLUSION:** There was no significant difference in treatment efficiency between conventional and self-ligating brackets in all variables except greater pain experience during rectangular wire insertion or removal in/from self-ligating attachments, and decreased time to ligate in or untie an archwire from self-ligating brackets. This meta-analysis cannot confirm most of the statements put forward by orthodontic distributors promoting their self-ligating brackets.