

OP32 THE 0.018 OR 0.022 INCH SLOT BRACKET SYSTEM? PRELIMINARY RESULTS FROM A RANDOMISED CLINICAL TRIAL

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**AIM:** To compare, in a randomised clinical trial, the effectiveness of orthodontic treatment with the 0.018 and 0.022 inch slot bracket systems. The primary objective was to compare treatment duration and the secondary to compare (1) the quality of treatment as measured by the American Board of Orthodontics-Case Report-Evaluation ABO-CR-Eval), the Peer Assessment Rating (PAR) scores, incisor inclination, and patient perception; and (2) the adverse effect of treatment as evaluated by the amount of maxillary incisor root resorption after 9 months from the start of treatment.

**SUBJECTS AND METHOD:** A multicentre prospective randomised clinical trial was carried out in Scotland. One hundred and ninety-eight participants with different types of malocclusion aged 12 years or over were randomly allocated to treatment with the 0.018 or 0.022 inch slot MBT appliance (3M-Unitek, Monrovia, California). The treatment and archwire sequence were standardised and data were collected at the start and end of treatment. Treatment outcome measures included: (1) duration of treatment (2) number of appointments and other treatment-related factors (3) ABO-CR-Eval (4) PAR scores and percentage PAR score reduction (5) incisor inclination (6) patient perception using the Aesthetic Component of the Index of Orthodontic Treatment Need and three questionnaires for patient perception before, during and after treatment and (7) root resorption. Parametric tests (independent samples *t*-test and two-way ANOVA) and non-parametric tests (Chi-square with Fisher's exact tests and Mann-Whitney *U*-test) assessed any differences between the groups ( $P < 0.05$ ).

**RESULTS:** The total number of patients with complete data was 153 (mean age: 19.1 years). The baseline characteristics were similar between groups. The mean duration of treatment for the 0.018 and 0.022 inch slot groups was 29.3 and 31.2 months, respectively. Patient perception of aesthetics improved as well as incisor root resorption occurred in both groups ( $P < 0.05$ ). However, there were no statistically significant differences between the two treatment groups in terms of treatment duration, number of appointments, quality of occlusal outcome, patient perception of treatment, and incisor root resorption ( $P > 0.05$ ).

**CONCLUSIONS:** There were no statistically significant differences in treatment duration, occlusal outcome, patient perception or root resorption with either the 0.018 or 0.022 inch slot MBT appliance.