

OP25 A MULTICENTRE, RANDOMIZED STUDY ON THE PLAQUE REMOVAL EFFICACY OF TWO INTERDENTAL BRUSHES IN THE AREA AROUND THE BRACKET BASE

**Christina Erbe**<sup>1</sup>, Lisa Zanders-Grote<sup>1</sup>, Yvonne Wagner<sup>3</sup>, Niklaus P. Lang<sup>4</sup>, Heinrich Wehrbein<sup>1</sup>, <sup>1</sup>Department of Orthodontics, University Medical Center Mainz, Germany, <sup>2</sup>Department of Pediatric Dentistry, Children's Dental Clinic, St. Gallen, Switzerland and <sup>3</sup>Dental Clinics of the Universities of Zurich and Berne, Switzerland

**AIM:** In patients treated with fixed appliances oral hygiene measures are impeded by the components of the appliances. The aim of this clinical multicentre study was to analyze the efficacy of the cleaning procedure of two interdental brushes in the area around the brackets.

**SUBJECTS AND METHOD:** In this multicentre, randomized, double-blind cross-over study, 20 patients (12 females, 8 males) between 12 and 18 years with fixed orthodontic appliances were examined at the Mainz School of Dentistry, Germany, and at the Children's Dental Clinic, St. Gallen, Switzerland. A conventional cylindrically-shaped interdental brush [IDBG-S® (IB), Top Caredent GmbH] was examined in comparison with an innovative waist-shaped interdental brush [CDB-8® (CB), Top Caredent GmbH]. Each patient was required to refrain from oral hygiene practice for three days and attended two examination appointments (T1/T2). Plaque Index (PI) scores were assessed following Silness and Loe before and after the cleaning procedure on eight tooth surfaces in the bracket area, on the archwire and on the bracket.

**RESULTS:** Both brushes showed a plaque removal effect. With application of the CB, the total PI of all surfaces was reduced by a median value of 0.68 [interquartile range (IQR): 0.63-0.77]. The application of the IB resulted in a median reduction of the total PI of 0.43 (IQR: 0.33-0.55). The difference between the two brushes was statistically significant at the 5 per cent level ( $P = 0.0015$ ). In particular, the CB yielded a higher plaque removal efficacy (CB effect: 0.68/IB effect: 0.21) on the main areas 1 and 8, which are difficult to reach. There was no indication of a carry-over effect (T1/T2) ( $P = 0.5920$ ).

**CONCLUSIONS:** The waist-shaped brush head of the CB significantly enhanced plaque reduction in total and particularly in problematic areas.