OP38 DOES ADMINISTRATION OF ANTIBIOTIC PROPHYLAXIS INCREASE ORTHODONTIC MINI-IMPLANTS SUCCESS RATE? A PRELIMINARY STUDY

Jan Łyczek, Joanna Antoszewska-Smith, Beata Kawala, Department of Dentofacial Orthopaedics and Orthodontics, Medical University of Wroclaw, Poland

AIMS: Introduction of temporary intraoral skeletal anchorage devices (TISAD) to orthodontics resulted in a significant enhancement of orthodontic treatment capabilities. However, loss of stability and eventual failure of TISAD remains the main problem related to their application. One of the major factors contributing to instability and loss of mini-implants is inflammation of the tissues surrounding the miniscrews induced by bacteria from oral microflora. The aim of this study was to verify if administration of a single dose antibiotic prophylaxis prior to mini-implant placement results in reduction of peri-mini-implant infection incidence, hence improving the stability and success rate of mini-implants.

SUBJECTS AND METHOD: Initially 50 generally healthy orthodontic patients aged 15-30 years with a malocclusion requiring maxillary anchorage reinforcement were selected. Ten patients having an immunological system impairment, allergy to any drug or heart and kidney Streptococcus spp. related diseases were precluded from the study. Subsequently, the patients were randomly assigned by means of minimization to control (16 females, 4 males) and study groups (13 females, 5 males). A placebo pill containing glucose and 875 mg amoxycyllin with 125 clavulanic acid were administered in the control and study groups respectively, one hour prior to surgery. As for group allocation, both the patients and the operator were blinded: auxiliary staff secured double blinding using opaque envelopes. Blood samples were collected from the patients prior to and on days 1, 3 and 7 following surgery and procalcitonin and C-reactive protein (CRP) levels were measured for objective infection identification. The levels of inflammatory markers were compared between groups by means Friedman ANOVA. Simultaneously peri-mini-implant site was assessed clinically two weeks after surgery in order to identify any signs of inflammation.

RESULTS: One and two mini-implants were lost in study and control groups respectively. There were no statistically significant differences in inflammatory markers levels or success rate between groups.

CONCLUSION: Administration of antibiotic prophylaxis prior to mini-implant placement does not reduce the incidence of peri-mini-implant tissue infection and does not improve mini-implant success rate.