INTRODUCTION: A deep overbite is a common malocclusion encountered in orthodontic patients. It represents about 95.2% of vertical occlusal problems in the general population and is more prevalent than open bite. It can be dentoalveolar or skeletal in origin, or a combination of both. The increasing number of adult patients seeking orthodontic treatment has led to an increased demand for aesthetic alternatives to fixed multibracket systems. For more than a decade, Invisalign® has treated patients presenting minor to complex malocclusions. However, there are limited data to assess the efficacy of Invisalign® in the treatment of deep overbite.

OBJECTIVE: To investigate the efficacy of deep overbite correction using Invisalign®.

MATERIAL & METHODS: Fifty-one adult patients who had undergone orthodontic treatment exclusively with Invisalign® were included in the preliminary data of this retrospective study. Pre- and post-treatment digital models acquired from an iTero® scan were obtained from a single orthodontist. Linear values of the pre- and post-treatment overbite were measured in the OrthoCAD® software. A sample t-test was used to measure the overbite correction achieved throughout the first round of aligners. Variance ratio tests were used to determine if the amount of pre-treatment overbite, the type and number of bite opening mechanics were correlated with larger corrections.

RESULTS: The mean overbite correction in deep bite subjects using Invisalign® was 1.031 (±0.775) mm. The mean overbite correction was 0.750 (±0.784) mm in the mild overbite group, 1.207 (±0.577) mm in the moderate overbite group and 1.280 (±0.834) mm in the severe overbite group. The overbite correction was greater in the severe overbite group compared to the mild and moderate overbite groups, but this was not statistically significant ($p > 0.05$). The mechanics that were used for overbite correction were mainly lower incisor intrusion (86.67%), upper incisor intrusion (83.33%), upper incisor proclination (80.00%) and lower incisor proclination (73.33%). Patients with upper incisor intrusion and lower incisor intrusion had a statistically significant greater overbite reduction ($p < 0.05$). An increased number of bite opening mechanics was correlated to a greater overbite correction, but this was not statistically significant ($p > 0.05$).

CONCLUSION: Invisalign® is successful at opening deep bites during the first set of aligners, up to just beyond 1 mm, irrespective of the depth of the initial overbite.