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Relative parallelism between occlusal plane and three ala-tragus lines in dentulous subjects – A cephalometric study

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ABSTRACT

Statement of Problem:

Determination of the occlusal plane is one of the most important clinical procedures in prosthodontic rehabilitation of edentulous patients. It forms the basis for ideal tooth arrangement. Ala-tragus line is the most widely used, well documented and commonly taught guide for the orientation of the occlusal plane, but perspectives vary concerning exact position of posterior reference point on the tragus of the ala-tragus line.

Purpose:

The present study was conducted to evaluate relative parallelism between occlusal plane

and ala-tragus lines. It was also intended to define the best posterior reference point of the ala-tragus line for orienting occlusal plane in edentulous patients of Indian population.

Materials and Methods:

The participants consisted of 30 male and 30 female subjects with Angle's class I occlusal relationship. Lead spheres were attached at the inferior level of ala and superior, middle and inferior position of tragus. Lead pellets were positioned at mesio-incisal edge of central incisor and mesiopalatal cusp tip of maxillary first molar. Lateral cephalograms were taken for all the subjects. The angles between Occlusal line (OL) and AT-1 (ala-

superior border of tragus), AT-2 (ala- mid-tragus) and AT-3 (ala-inferior border of tragus) were measured as OL^AT-1, OL^AT-2 and OL^AT-3 respectively. Comparison of three ala-tragus lines and the occlusal plane was done by one way analysis of variance (ANOVA). The difference in inclination of the occlusal plane between males and females was analyzed by Unpaired-T test.

Results:

The results showed that in all subjects and females AT-2 was more parallel to the occlusal plane with mean angular value of 1.97° , SD = 3.51 and 0.26° , SD = 3.07 respectively. Whereas in male subjects AT-3 was parallel to OP with mean of -0.68° , SD = 3.19. Significant difference in the angles between occlusal plane and 3 ala-tragus lines was found with the 'f' values of 67.80, 45.07 and 42.79, 'p' < 0.0001 which is statistically

very highly significant in all, female and male subjects. There is statistically very highly significant (p = 0.001) difference in inclination of occlusal plane between males and females.

Conclusion:


There is relative parallelism between ala-tragus line and occlusion plane. In females, middle point of the tragus and in male subjects the inferior border of the tragus are suggested as the posterior reference points for ala-tragus line orientation.

Key Words:

Occlusal plane, Ala-tragus line, Cephalometrics

Clinical Implications:

There is relative parallelism between Ala-tragus line and occlusal plane with significant difference between males and females. In females Occlusal plane inclines more superiorly than males.

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