

FACIAL MEASUREMENTS: RELIABILITY AND CORRELATION BETWEEN TWO INSTRUMENTS

Maria Natalia Leite De Medeiros, Francine Santos Ramos Favaretto, Jamie Lyn Perry, Ana Paula Fukushiro and Renata Paciello Yamashita

Objective: To examine the correlation between two instruments of measurement used for facial analyses, and to verify the reliability of their use in clinical practice. **Methods:** Facial measurements including inferior third(IT), width(WD), out corner of the eyes(CE), height of upper(HU) and lower(HL) lips of 51 patients with cleft palate(CP), both genders, aged 19 to 37(24.4 ± 4.6) years were carried out by using a caliper. The same measurements were performed through the analyses of volumetric 3D reconstructions of cone beam computed tomography images of each patient by using Amira Software 5.6. Reliability was calculated after reanalyzes of 100% of the images by using Interclass Correlation Coefficient(ICC). Correlation between the measurements resulted for both instruments was determined by Pearson product-moment correlation. Differences between the methods of analysis were obtained by one-sample t-test(95%). **Results:** The ICC obtained for IT, WD, CE, HU, and HL ranged from .939 to .986(excellent reliability). The means of IT, WD, CE, HU, and HL were $69.99(\pm 11.90)$ mm, $109.21(\pm 7.17.05)$ mm, $68.81(\pm 8.48)$ mm, $19.40(\pm 3.91)$ mm, and $50.42(\pm 8.73)$ mm for measures obtained using the caliper; and $65.35(\pm 7.56)$ mm, $104.07(\pm 6.00)$ mm, $67.28(\pm 5.27)$ mm, $18.29(\pm 3.28)$ mm, and $46.03(\pm 5.84)$ mm for measures obtained using the software. Correlation between the measurements resulted from both instruments was strong for IT($r=0.91$) and CE($r=0.85$), moderate for HU($r=0.72$) and HL($r=0.70$), and weak for WD($r=0.44$), $p<0.001$. **Conclusion:** In general, an acceptable correlation between the resulted measurements from both instruments was found. However, it has to be considered the application of strategies to reduce the possible errors of using a caliper during the evaluation process, thus, increasing the reliability and reproducibility of the assessments.