Mandible Cortical Bone Assessment in Patients with Type II Diabetes Mellitus using Panoramic Radiograph

L. Epsilawati¹, F. Pramanik¹, Y. Ambarita¹.

¹Oral Maxillofacial Radiology Department, Faculty of Dentistry, Padjadjaran University, Bandung, Indonesia

Introduction: Type II Diabetes mellitus is a systemic disease, where the body has a metabolic disorder due to deficiency of the insulin. One side effect of this disease is the decrease in the quality of the bone. One of the tools that can be used to assess is panoramic radiography.

Objective: The aim of this study was to assess the quality of the mandibular cortical bone in patients with type 2 diabetes using panoramic radiographs.

Materials and methods: This study used descriptive method. Research was conducted on cortical bone of the mandible using three methods: 1) calculating the percentage between the bone and the marrow, 2) measuring cortical bone height at foramen mentale named mental index (MI) and 3) assess bone quality with Panoramic mandibular index (PMI). The population is all the panoramic radiographs of Type II diabetic patients in Padjadjaran dental hospital, while the samples include 25 pieces consists of 15 women and 10 men, aged between 25-50 years old, and radiographs should clearly visualize mandibular cortical bone.

Results: The results showed that the percentage of bone 33.37% and marrow 66.63% in men, while in women have percentage of bone 38.17% and marrow 61.83%. MI scores of both men and women are 2.6 mm, while the PMI of both men and women are dominated by C2.

Conclusion: Percentage mandibular cortical bone in patients with Type II diabetes showed that the ratio of bone and marrow in men lower than women, while for the assessment of MI and other PMI at the same value.

Keywords: Assessment of Cortical bone, Type II Diabetes Mellitus