ABSTRACT:
Osteoporosis is a condition characterized by a loss on bone mineral density and there is micro-architectural deterioration in bone tissue leading to fracture.
Dental radiographs are the most frequently used imaging modalities for teeth and jaw pathology.
The purposes of this study were to review the role of panoramic radiograph in routine dental treatment for an initial evaluation of osteoporosis and to discuss the reliability and accuracy of reported panoramic indices.

The findings obtained by orthopantomography (OPG) presented as mandibular indices can be used as early evidence of any changes in the total bone mineral density. These indices can be determined by the number of lost teeth, the alveolar bone resorption, the lamina dura width, the mandibular cortical thickness, and by the morphology of the inferior cortical edge of the mandible. (3, 4, 5)

The aim of the present study is to acquaint dental community with the mandibular cortical index (MCI) referred to as Klemetti index, an index that is obtained by OPG and utilised here to diagnose osteopenia and osteoporosis.

METHOD:
There are many OPG-based indices and techniques using which we can determine and analyse the mandibular bone by using various parameters of the bone. (Fig. 1).

INTRODUCTION:
Osteoporosis is a condition characterized by a low bone mineral density (BMD) and microarchitectural deterioration leading often to fractures. Diagnosing it as early as possible is of paramount importance in preventing complications from osteoporosis. (1, 2)
A. Total bone height (width); B. Mandible height measured from mental foramen to the inferior cortical edge of the mandible; C. Thickness of the inferior cortical edge of the mandible (mandibular cortex).

Determination of the bone quality based on the analysis of OPG is most often performed using the Klemetti index (MCI). It is used to seek evidence of resorption and osteoporosis in the inferior cortical edge. It is basically about the following: The appearance of the inferior cortical edge of the mandible (the C parameter in Fig. 1) in the region distal to the mental foramen can be classified in three categories depending in the degree of resorption:

**Figure 2.**

C1 - normal cortex. The endostic margin is uniform and marked on both sides. (Fig. 2)

C2 - Slightly or moderately eroded cortex. The endostic margin appears to have resorption cavities and cortical residues consisting of 1 to 3 thin layers (Fig. 3).

C3 - Cortex is severely eroded. The cortical bone is clearly porous and there is a significant amount of residue. (Fig. 4)

To illustrate the application of the index we present the 71-year-old V.I.S. who received OPG study due to inflammation in the mandible. His mandibular cortical index was C2. The patient was referred to endocrinologist for consultation. We studied the general bone density of the patient using bone density assessment method and found that the patient had a mild form of osteoporosis - bone density 83%, T score 1.73 (Fig. 5, 6).

**Figure 3.**

**Figure 4.**

**Figure 5.**
**CONCLUSION:**
The variations in the width and shape of the inferior cortical edge of the mandible are seen clearly on OPG. Determination of Klemetti index is an easy and simple screening method where dentists use an X-ray made for other reasons without the patient being additionally burdened radio logically and financially.

**REFERENCES:**


**Corresponding author:**
Dr. Stefka Peycheva
Department of Maxillo-facial surgery, UMBAL “Sv. Georgi” - Plovdiv 66, Peshtersko shose str., 4000 Plovdiv, Bulgaria
e-mail: paecheva_steffi@yahoo.com;