

## **Root and canal morphology of mandibular permanent anterior teeth**

*LeClair Alexei Alexander*

*Belarusian State Medical University, Minsk*

*Tutors – PhD, Associate Professor Savrasova Nina Alexandrovna, Belarusian State Medical University, Minsk,*

*PhD, Researcher Melnichenko Yuliya Michailovna, Belarusian State Medical University, Minsk*

### **Introduction**

Successful root canal therapy requires knowledge of tooth anatomy and root canal morphology, which may be quite variable within the normal range. Cone beam computed tomography (CBCT) provides the clinician the ability to view an area in three different planes and to gain three dimensional information. The permanent mandibular anterior teeth have a wide variety of root canal morphologies.

### **Aim**

Evaluation of root and canal configurations of mandibular permanent incisors and canines by the means of CBCT images.

### **Materials and methods**

36 CBCT images of mandibular permanent incisors and canines were evaluated. Number of roots, canals, root lengths and curvatures were surveyed. Vertucci's classification was used to evaluate canal types.

### **Results**

According to the findings of this study all mandibular central and lateral incisors had one root, but the incidence of single rooted mandibular canines was 96.3% and two rooted mandibular canines was 4.7%. Most of the mandibular central, lateral incisors and canines had a single-root canal (72.7%, 70.6% and 71.8%, respectively); the prevalence of two root canals was 27.3% for the mandibular central incisors, 29.4% for the mandibular lateral incisors and 28.2% for the mandibular canines. Five types of Vertucci canal configurations were seen in all mandibular central and lateral incisors and canines. Type I Vertucci configuration was the most prevalent configuration (72.7%, 70.6% and 71.8%, respectively), and the least prevalent Vertucci canal configuration was type V (3.6%, 3.2% and 2.3%, respectively). The most prevalent root curvature in mandibular anterior teeth was the distal and consequently the buccal type.

### **Conclusion**

In the studied CBCT images, a high percent of mandibular central and lateral incisors and canines had two canals and root curvatures.