Mandibular bone: an unusual trabecular bone?

INTRODUCTION

Mandibular bone: Teeth-bearing bone (alveolar) with high turnover, particularly sensitive to local factors. Specific skeletal-site due to oral functions (masticatory activity): specific trabecular microarchitecture?

Compare trabecular bone microarchitecture between 2 mandible areas (toothed and untoothed area) and the tibia in adult rats.

MATERIAL AND METHODS

INTRODUCTION

Skyscan 1172 (Bruker, Kontich, Belgium)
10µm (voxel size), 80kVp, 100µA, 0.5°/180°, 2400 ms, FA 3
- Mandible: Intra-radicular alveolar bone of the first molar and central area of the condyle
- Tibia: Secondary spongiosa of the proximal epiphysis

Measurements: Trabecular number (Tb.N), thickness (Tb.Th) and separation (Tb.Sp), relative trabecular volume (TbV/TV), relative medullar volume (MV/TV)

RESULTS

X-ray microtomography: mean +/- SD – Wilcoxon test

CONCLUSION

- Mandibular oral functions leads to more dense trabecular network compared to tibia.
- In the mandible area, teeth-bearing bone (alveolar) leads to a different microarchitecture compared to condylar bone.
- Present data highlight the importance to study mandibular response under pathophysiological conditions, such as osteoporosis, and to precise bone marrow compartments alterations.

REFERENCES