



Relationships between bone mass and micro-architecture at the mandible and iliac bone in edentulous subjects: a dual X-ray absorptiometry, computerised tomography and microcomputed tomography study

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Résumé en anglais	<p>Relationships between bone mass and micro-architecture at the mandible and iliac bone in edentulous subjects: a dual X-ray absorptiometry, computerised tomography and microcomputed tomography study</p> <p>Objectives: To compare bone volume, bone mineral density, cortical thickness and bone micro-architecture in a series of paired mandibular and iliac bone samples analysed by various imagery techniques to see whether relationships exist between the various techniques and between mandibular and iliac bone. Materials and methods: Bone samples from the mandible and ilium were harvested in 20 cadavers and analysed by dual energy X-ray absorptiometry (DXA), computerised tomography (CT) on a conventional hospital machine and microCT. Results: Significant correlations were found between Hounsfield density obtained by CT, and bone mass determined by microCT but not with DXA values. Cortical thickness measurements were well correlated between CT and microCT. No relationships were found between mandibular and iliac bone, when considering mineral density, cortical thickness, bone volume or micro-architecture. Conclusion: In clinical practice, CT remains the most appropriate routine means for bone qualitative and quantitative evaluation at the mandible. In this ex vivo study, these results confirm that mandibular bone status does not reflect the axial skeletal one and assist in the placement of implants with dental prostheses in old or osteoporotic patients.</p>

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