Table 1

	Stable Angina n=335	Unstable angina nont S-T n=804	Myocardial Infarction n=536	Healthy N=680
L2- L4	-2.6±1.1 *	-2.9±1.4 **	-3.1±1.1 **	-0.6±0.2
Prox. Femur Neck	-1.8±0.5 *	-2.6±1.4**	-2.5±1.6**	-1.14±0.26
Prox. Femur Total	-2.7±1.48**	-2.7±0.2**	-2.7±1.25**	-1.05±0.5

*p<0.01 **p<0.001.

deteriorated than cortical 3. Correlation between T Score values and clinical forms of Atherosclerosis were not observed 4. The best understanding of interrelations of mechanisms could point out the right direction for the simultaneous therapy against both targets – Osteoporosis and Atherosclerosis 5. Therefore the expectation of establishing novelty direction among other subtypes of the Medical Specialties as a Preventive Gerontology can be realistic

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AB0847 ACCURATE ASSESSMENT OF FEMORAL ECHOSOUND APPROACH PERFORMANCE THROUGH DXA ERROR ANALYSIS

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Background: Currently, the accepted “gold standard” method for bone mineral density (BMD) measurement and osteoporosis diagnosis related to the reference axial anatomical sites is dual-energy X-ray absorptiometry (DXA). However, actual DXA effectiveness is limited by several factors, including intrinsic accuracy uncertainties and specific errors in patient positioning, image segmentation, and post-acquisition data analysis, as documented by very recent literature [1]. This may affect the comparative evaluation of the effectiveness of novel diagnostic methods whose validation studies adopt DXA outcomes as standard reference to assess diagnostic performance.

Objectives: To assess the impact of DXA errors on the performance of an innovative ultrasound parameter for osteoporosis diagnosis on the femoral site, known as Osteoporosis Score (OS).

Methods: 202 patients aged in 46–75 years underwent two diagnostic investigations on the femoral neck: a conventional femoral DXA and an echographic scan performed by employing the innovative EchoSound technology [2]. Initially, the performance of the OS parameter was evaluated considering all the available DXA reports as reference in the data analysis, and calculating the corresponding accuracy in patient classification (osteoporotic, osteopenic, or healthy) and the correlation coefficient between the DXA-measured BMDs and the OS-derived BMD values. At a later stage, the DXA errors were taken into account by performing a strict quality control on DXA reports: all those cases affected by a typical inaccuracy [1] were excluded from the analysis and the actual diagnostic accuracy of the EchoSound technology was re-assessed by analysing only the reliable DXA reports. Intra- and inter-operator repeatability of OS-derived BMD values were also measured in a group of patients.

Results: A diagnostic accuracy of 84.4% ($r = 0.78$, $p < 0.001$) was obtained for the EchoSound approach when all the DXA reports were included in the analysis. In the second part of the study, 61 out of the initial 202 (30.4%) patients were excluded from the analysis because their DXA reports were affected by specific errors. An actual diagnostic accuracy of 94.2% was then obtained on the remaining 141 patients, together with a high correlation between DXA-measured BMDs and OS-derived BMD values ($r = 0.88$, $p < 0.001$). Intra- and inter-operator repeatability of OS-derived BMD values, expressed in terms of the root mean square coefficient of variation (RMS-CV), resulted equal to 0.29% and 0.34% for intra- and inter-operator variability, respectively, therefore documenting a very good measurement repeatability.

Conclusions: Undetected DXA errors had an impact on the accuracy evaluation of EchoSound femoral neck densitometry, causing an underestimation of OS performance in osteoporosis diagnosis. The quality control analysis on DXA reports can be useful to study the actual performance of different ultrasonic methods that considered routine DXA reports as the gold standard reference.

References:

[1] Eur Radiol 2015;25:1504.

[2] UMB 2015;41:281.

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AB0848 DENTAL PANORAMIC RADIOGRAPHY AS A TOOL FOR IDENTIFICATION OF OSTEOPOROSIS: AMONG TUNISIAN WOMEN

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Background: Osteoporosis is defined as a skeletal disorder characterized by low-bone mass predisposing to an increased risk of fracture. At present, the evaluation of bone mineral density (BMD) is the main diagnostic tool in osteoporosis, and it is the most effective and accurate measurement for identifying and monitoring the disease. However, several studies have been conducted with the object of detecting whether these skeletal changes in the mandible are specific to the osteoporotic stage.

Objectives: The purpose of this study was to determine whether the mandibular indices on panoramic radiographs are useful for identifying women with osteoporosis or osteopenia (low BMD).

Methods: Tunisian women aged from 30 to 60 years, who consulted the Rheumatology department of Fattouma Bourguiba university hospital in 2017. The measure the BMD using the dual-energy X-ray absorptiometry (DEXA), were recruited to participate in this case-control study. Among the 60 women selected, 30 were diagnosed with osteoporosis or osteopenia (T-score < -1; cases) and 30 with normal T-score (T-score > -1; controls). The mandibular cortical index (MCI), the mental index (MI), the panoramic mandibular index (PMI) and the alveolar crest resorption degree (M/M ratio) were measured from digital panoramic radiographs in the right and left mandibles and the mean was calculated for each subject. The MI, PMI and M/M ratio values were evaluated using the Z test, and MCI values were analysed using the Chi² test.

Results: The mean age of patients with osteoporosis/osteopenia was 58.61±8.11 and 56.07±9.72 in the control group. The mean bone mineral density (BMD) in vertebral site was 0.856±0.090g/cm² and 1.216±0.185g/cm² in control group. In femoral site, it was 0.877±0.221g/cm² and 1.061±0.142g/cm² respectively. The mean T-score in vertebral site was -2.38±0.81DS in osteoporosis/osteopenia group and 0.64±1.58DS in control group. In femoral site, it was -1.57±0.97DS and 0.21±1.16 respectively.

The analysis of the panoramic radiography showed that in the osteoporosis/osteopenia group: the mean value of MI was 3.56±0.89, the mean PMI was 0.25±0.06 and the mean M/M ratio was 0.71±0.14; concerning the MCI: 46.7% were classified C2 stage and 53.3% were classified C3 stage.

In the control group, the mean MI was 4.42±0.98, the mean PMI was 0.30±0.07 and the mean M/M ratio was 0.77±0.11; 30.1% were classified C1 stage, 53.3% were classified C2 stage and only 16.6% were classified C3 stage.

This study showed that the MI and the PMI were significantly smaller in the group with osteoporosis/osteopenia. However, the M/M ratio was not significantly different. Therefore, the MCI was significantly more affected in the osteoporosis/osteopenia group.

Conclusions: In our study, we proved that the MI, PMI and MCI values were affected in women with osteoporosis/osteopenia, compared with normal patients. Therefore, these indices could be used as an ancillary method in the diagnosis of osteoporosis in women.

References:

[1] C S Valerio et al, Dentomaxillofacial Radiology (2013) 42, 20120059.

[2] André Ferreira Leite, et al, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2011;112:648–656.

[3] Vlasidis Z. Konstantinos, et al, Maturitas 58 (2007) 226–235.

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AB0849 ASSOCIATION BETWEEN PERIODONTITIS AND OSTEOPOROSIS

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Background: Both periodontitis and osteoporosis have similar sign of bone resorption in nature and have multifactorial etiologic factors, although the mediator factors or mechanism may be different. How to prevent and treat these two bone-loss diseases is always an important issue in public health. However, the relationship of them is still uncertain.

Objectives: The aim of our study is to evaluate the relationship between periodontitis and osteoporosis.

Methods: Tunisian women aged from 30 to 60 years, who consulted the Rheumatology department of Fattouma Bourguiba university hospital between February to December 2017. The measure the bone mineral density (BMD) using the dual-energy X-ray absorptiometry (DEXA), were recruited to participate in this case-control study. Among the 60 women selected, 30 were diagnosed with osteoporosis or osteopenia (T-score < -1; cases) and 30 with normal T-score (T-score > -1; controls). The oral examination was done by a dentist in the stomatology department in the same hospital.

Results: The mean age of patients with osteoporosis/osteopenia was 58.61±8.11