Background: The radiograph of the spine is the gold standard for identifying vertebral fracture in obese adults. This belief was partially suggested by the positive correlation between bone mineral density (BMD) and body mass index (BMI).

Methods: This is a cross-sectional study including Tunisian patients referred for an assessment of BMD through dual-energy X-ray absorptiometry (DXA). BMD was measured using standard methods over the lumbar spine L1-L4, the total proximal femur. The results were expressed as T-scores according to the World Health Organization definition. Patients were sub-grouped according to age (>50 years) and BMI (≤25 kg/m²).

Results: The study included 100 patients with a female predominance (sex ratio = 1:1). The mean age for women was 61.9 ± 13 (18-83) years and the mean age for men was 59.7 ± 7.5 (47-72) years. The mean body mass index was 29.1 ± 5.0 kg/m² (25-31) for women and 27.6 ± 5.3 kg/m² (22.8-32.9) for men. Forty percent of all patients were obese with a BMI of 32.9 kg/m² ± 4.3. Osteoporosis was diagnosed in half of the men (55.5%) and most of the women (70%). Twenty-nine percent of patients suffered from osteoporosis. BMD of the spine was similar between men and women (p = 0.038). The mainstream of the subjects >50 years had more vertebral fractures, suffered more from osteoporosis and had a higher BMI than those <50 years (95% vs 5%; p = 0.04), (92.3% vs 77%; p = 0.03) and (82.5% vs 75%; p = 0.05) respectively. There was no correlation between BMD of the spine and higher BMI (0.94 in G1 vs 0.98 in G2; p = 0.3). Similarly, there was no correlation between BMD of the hip and higher BMI (0.9 in G1 vs 0.84 in G2; p = 0.2). Moreover, Obese patients had less a vertebral fracture but with no statistically significant correlation (21% in G1 vs 25% in G2; p = 0.2).

Conclusion: Our study showed that obesity was frequent among Tunisian patients but was not associated with a higher BMI. Older age was directly associated with a lower BMI and higher risk for vertebral fracture.

Disclosure of Interests: None declared.

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AB0614 DENSITOMETRIC VERTEBRAL FRACTURE ASSESSMENT: FACTORS LIMITING GOOD VISIBILITY OF THE VERTEBRA

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Background: The radiograph of the spine is the gold standard for identifying vertebral fractures (VF). Vertebral Fracture Assessment (VFA) is a new feature available on modern densitometers that could assess VF. This technique offers the advantage of low irradiation over standard radiography but at the cost of lower image quality.

Objectives: The aim of this study was to assess factors associated with good vertebral visibility when using VFA.

Methods: This is a cross-sectional study including patients referred by their physicians for bone mineral density (BMD) measurement. Anthropometric data were collected and BMD was measured using standard methods over the lumbar spine L1-L4, the total proximal femur. Results were expressed as T-scores using Dual-energy X-ray absorptiometry (DEXA). The screening for VF was performed by VFA. A professional developer analyses VFA scans and assessed the good visibility of the vertebra.

Results: The study included 100 patients. The mean age was 61.7 ± 12.6 years [18-83]. The average body mass index (BMI) was 28.9 ± 5.2 kg/m² [14.2-45.3].

The mean T-score at the vertebral site was -1.5 DS [-4.9-1.5] with a mean mass of 0.95g/cm² [0.58-1.37]. Osteoporosis was found in 27.7 % of patients. A vertebral fracture was diagnosed in 25% of cases. The visualization of the vertebra was impaired in the upper thoracic region in 60% of cases. Poor visibility was observed in 19% of cases in the mid-thoracic spine and only in 2% of cases in the lumbar spine. No statistically significant correlation was found between good vertebral visibility and age (p=0.2), weight (p=0.5), or BMI (p=0.7). However, good visibility of the vertebra was associated with a lower height (1.7 m vs 1.5 m, p=0.03). A better vertebral visualization was correlated neither to the BMD of the right hip (0.84 vs 0.87, p=0.4) nor to the left hip (0.85 vs 0.89, p=0.3). Similarly, the absence of vertebral osteoporosis was not correlated with a better vertebral visualization (p=0.6).

Conclusion: Visibility of the vertebra on VFA does not appear to be altered by the BMD and vertebral osteoporosis, suggesting safe use in the elderly. However, precautions may be taken when interpreting VFA in patients with high heights.

Disclosure of Interests: None declared.

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AB0615 ASSESSMENT OF THE IMPACT OF OBESITY ON BONE LOSS

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Background: Most of the available evidence supports a lower risk of vertebral fracture in obese adults. This belief was partially suggested by the positive correlation between bone mineral density (BMD) and body mass index (BMI).

Objectives: We aimed to assess the association of BMI with BMD and to explore their relation with age and gender.

Methods: This is a cross-sectional study including Tunisian patients referred for an assessment of BMD through dual-energy X-ray absorptiometry (DXA). BMD was measured using standard methods over the lumbar spine L1-L4, the total proximal femur. The results were expressed as T-scores according to the World Health Organization definition. Patients were sub-grouped according to age (<50 years and >50 years). Association between BMD and age as well as BMI was also assessed (G1: obese patients and G2: non-obese patients). The level of significance was fixed for p=0.05.

Results: The study included 100 patients with a female predominance (sex ratio = 1:1). The mean age for women was 61.9 ± 13 (18-83) years and the mean age for men was 59.7 ± 7.5 (47-72) years. The mean body mass index was 29.1 ± 5 kg/m² (25-45) for women and 27.6 ± 3.6 kg/m² (22.8-32.9) for men. Forty percent of all patients were obese with a BMI of 32.9 kg/m² ± 4.3. Osteoporosis was diagnosed in half of the men (55.5%) and most of the women (70%). Twenty-nine percent of patients suffered from osteoporosis. BMD of the spine was similar between men and women (p = 0.038). The mainstream of the subjects >50 years had more vertebral fractures, suffered more from osteoporosis and had a higher BMI than those <50 years (95% vs 5%; p = 0.04), (92.3% vs 77%; p = 0.03) and (82.5% vs 75%; p = 0.05) respectively. There was no correlation between BMD of the spine and higher BMI (0.94 in G1 vs 0.98 in G2; p = 0.3). Similarly, there was no correlation between BMD of the hip and higher BMI (0.9 in G1 vs 0.84 in G2; p = 0.2).

Conclusion: Obese patients had less a vertebral fracture but with no statistically significant correlation (21% in G1 vs 25% in G2; p = 0.2).

Disclosure of Interests: None declared.

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AB0616 RISK FACTORS FOR PREVALENT VERTEBRAL FRACTURE: ASSESSMENT IN A LONDON URBAN BOROUGH

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Background: Vertebral fragility fractures (VFFs) are commonly under-diagnosed, due to a lack of a validated primary care tool and reduced quality of life. It is particularly important to identify and manage VFFs, as they are important predictors of future VFFs and non-VFFs. Patients with VFFs often have multiple risk factors, which are important to identify to formulate a tailored and appropriate management plan. There is a paucity of studies that have investigated risk factors specifically for VFFs.

Objectives: To identify the prevalence of osteoporosis risk factors in patients with VFFs.

Methods: This is a cross-sectional study including patients referred by their physicians for bone mineral density (BMD) measurement. Anthropometric data were collected and BMD was measured using standard methods over the lumbar spine L1-L4, the total proximal femur. Results were expressed as T-scores using Dual-energy X-ray absorptiometry (DEXA). The screening for VF was performed by VFA. A professional developer analyses VFA scans and assessed the good visibility of the vertebra.

Results: The study included 100 patients. The mean age was 61.7 ± 12.6 years [18-83]. The average body mass index (BMI) was 28.9 ± 5.2 kg/m² [14.2-45.3].