

SUMMARY

There are discrepant references in the literature regarding the relationship of androgen status and body composition in middle-aged men. This motivated us to investigate body composition, hormonal status and calcium metabolism in a group of men from east bohemian region, with the aim to study their interrelationship. The purpose was to find out how do hormonal changes determine the above mentioned parameters and to identify the most suitable investigations for clinical use.

Total testosterone did not decrease with age neither in the control group, nor in patients with fractures and mean testosterone levels were in a reference range in both groups. The drop in free testosterone with age did not reach statistical significance. Interesting finding was differences in total hormones found in obese persons ($BMI > 25 \text{ kg/m}^2$). In the fracture group testosterone levels were significantly higher and estradiole levels significantly lower than in control group. These surprising results let us to hypothesize, why in our series (to the contrary to obese women) does not obesity protect against decrease in bone mineral density.

We did not find any reason to investigate adrenal hormones and IGF-I in clinical practice. Well known risk factors of osteoporotic fracture in men (age, physical activity) are now improved by bone mineral density (BMD) measurement – T-score in the lumbar spine and hip less than $-2,5 \text{ SD}$. According to our experience it is reasonable to add measurement of T-score in the Ward's triangle (less than $-2,5 \text{ SD}$), as this region is not evaluated in routine assessment. For whole body measurement we recommend to evaluate percent fraction of bone mass in trunk ($<1,4\%$) and whole body ($<2,5\%$). The possibility to express it as percent of whole body composition by simple formula is one of practical results of our study.