

# L53 IMPACT OF HYPOGONADISM ON BONE MIN. DENSITY IN PATIENTS WITH SECONDARY HYPERPARATHYROIDISM (ESRD)

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### IMPACT OF HYPOGONADISM ON BONE MINERAL DENSITY IN PATIENTS WITH SECONDARY HYPERPARATHYROIDISM (ESRD)

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— **Key words:** *DXA, ESRD PATIENTS hypogonadism, Hyperparathyroidism*

— **Background:** Hypogonadism is associated with low bone mass, in men and women. ESRD is associated with a lot of hormonal effects on the hypothalamic-hypophysis-gonadic axes. We studied the relationship between hypogonadism and BMD, bone turnover and bone loss in patients with ESRD.

**Methods Material:** The study group comprised patients, diagnosed with secondary hyperparathyroidism, from all of the chronic hemodialysed patients treated in the Haemodialysis and Renal Transplantation Center from the County Hospital nr.1. We diagnosed secondary hyperparathyroidism by means of repeated iPTH values ( $> 3 \times \text{UNL}$ ), increased bone turnover markers. We also measured LH,FSH,PRL, Total testosterone and

estradiol levels. Gynecological and urological evaluation were also done. BMD was measured with DXA (anteroposterior technique, Delphi W device, Hologic Inc.).

**Results:** From the total of 66 (36 men, 30 women) cases with secondary hyperparathyroidism, with a mean age 44,32 years, being in the hemodialysis treatment for a period of  $49,6 \pm 43,72$  months, 31 (46,9%) had hypogonadism. 39% of men had secondary partial testosterone deficiency, 26,6% of the females had secondary amenorrhea due to hyperprolactinemia and uremia, and 9 women were in natural menopause.

In the condition of insignificant difference of age, hemodialysis length, BMI, there were significant difference regarding BMD as measured by DXA in hypogonadal compared with eugonadal patients (spine:  $0,811 \pm 0,117$  g/cm<sup>2</sup> versus  $0,918 \pm 0,154$ ,  $T = -4,298$ ,  $p = 0,00006$ , total hip:  $0,720 \pm 0,13$  versus  $0,844 \pm 0,113$ ,  $T = -4,101$ ,  $p = 0,00011$ ). Fig 1 and 2. Sexual steroid deprivation, both in women and men, is associated with lower DMO. The difference is more important at lumbar spine level.

The risk of having bone demineralisation is higher in hypogonadal patients at spine level (OR = 1,038) or osteoporosis (OR = 3,98) compared with hip level (osteopenia: OR = 1,3, osteoporosis OR = 1,904)

**Conclusion:** Physiological or secondary hypogonadism impairs BMD in patients with secondary hyperparathyroidism. The effect is independent of age of the subject, BMI, or lengths of hemodialysis.