Sex difference in the clinical presentation of primary hyperparathyroidism

Data from the literature suggest a worse prognosis in males with primary hyperparathyroidism (PHPT). This study’s aim is to evaluate whether clinical presentation of PHPT is modified by sex and menopausal status. The study is a retrospective single center clinic-based analysis of 417 consecutive patients referred for PHPT: 93 men, mean age (SD) 58.6 years (± 14.5 years) and 324 women, mean age 61.7 years (± 12.8 years). 54 women were premenopausal and 270 postmenopausal. Patients were defined as «symptomatic» in the presence of skeletal manifestations (on imaging and DEXA), nephrolithiasis and/or symptoms related to hypercalcemia.

Results
Men were significantly younger and more frequently symptomatic than women. No sex difference was found in serum PTH, calcium, creatinine, 25-OH-vitamin D, and urinary calcium levels, whereas serum phosphate was higher in postmenopausal women. Nephrolithiasis (detected by imaging or history) was more frequent in men (as in the general population) while osteoporosis was more frequent in women (due to increased prevalence in the postmenopausal group). Symptoms were more common among males and in premenopausal women. Most common surgical indications were osteoporosis in postmenopausal women and nephrolithiasis in premenopausal women and in male patients. No sex difference was observed in the proportion of patients referred to surgery.

Conclusions
The study highlights, for the first time, the role of menopausal status on clinical and biochemical presentation of PHPT. The differences observed when comparisons are made between male patients and the whole female population tend to disappear when comparison is restricted to premenopausal women (including the level of phosphates), which suggests a role of the estrogens. Both males and premenopausal women shared an increased prevalence of patients with symptoms and nephrolithiasis, which are common reasons for referral. Postmenopausal women were more often asymptomatic at presentation and the most common reason for referral in this group was DEXA-detected osteoporosis. Since the biochemical markers did not differ between groups, it may be hypothesized that the lack of estrogens be the main factor affecting clinical presentation of PHPT in post-menopause.
In summary, according to this study, biochemical manifestations of PHPT and surgical indications do not seem to differ in relation to sex, while clinical presentation may differ in postmenopausal women. The analysis of consecutive patients is in line with real life practice but the retrospective single-center nature of the study may limit its external validity.

References