

Androgen distribution in different phenotypes of women with polycystic ovary syndrome (PCOS)

Dusan Ilic¹, Ivana Bozic Antic¹, Jelica Bjekic-Macut², Danijela Vojnovic Milutinovic³, Tamara Bogavac¹, Bojana Popovic¹, Tatjana Isailovic¹, Valentina Elezovic¹, Sanja Ognjanovic¹, Olivera Stanojlovic⁴, Svetozar Damjanovic¹, Djuro Macut¹

¹ Clinic of Endocrinology, Diabetes and Metabolic Diseases, Clinical Center of Serbia, Belgrade, Serbia, ² CHC Bezanijska kosa, Belgrade, Serbia, ³ IBISS, University of Belgrade, Serbia, ⁴ Institute of Physiology, Faculty of Medicine, University of Belgrade, Serbia

Introduction

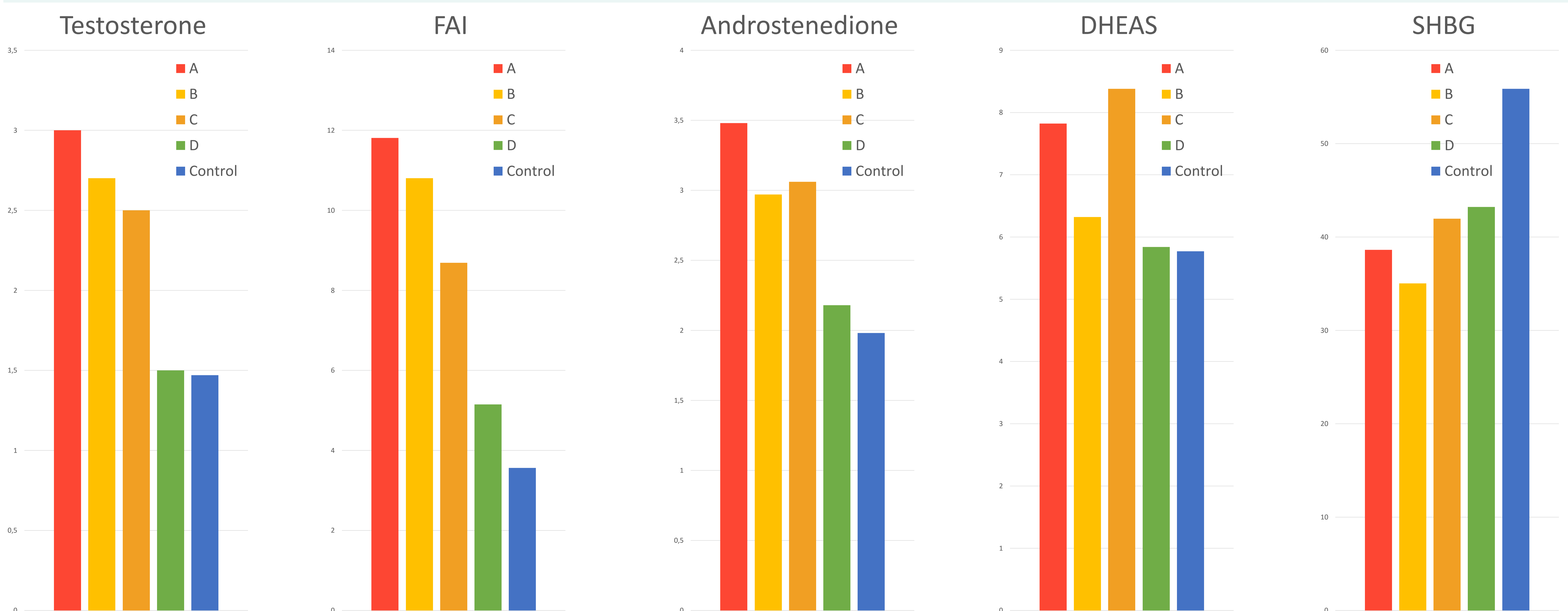
Polycystic ovary syndrome (PCOS) phenotypes A and B are considered to be more hyperandrogenic in comparison to phenotypes C and D that are considered to be mostly reproductive. The aim of this study was to analyze distribution of androgens in different phenotypes in our PCOS population.

Methods

We evaluated 365 PCOS women (PCOS: 25.05±6.24 kg/m²; 25.48±5.21 years) diagnosed using ESHRE/ASRM criteria and 125 healthy women (Controls: 25.41±5.16 kg/m²; 30.35±5.62 years). PCOS group was divided into 4 phenotypes: A [anovulation (ANOV), hyperandrogenism (HA), polycystic ovary morphology (PCOM)], B (ANOV, HA), C (HA, PCOM) and D (ANOV, PCOM). In follicular phase of menstrual cycle total testosterone (TT), SHBG, androstenedione and DHEAS and free androgen index (FAI) were determined in all subjects. All analyses were BMI and age adjusted.

Results

In comparison to Controls, phenotypes A, B and C had higher levels of TT, FAI, and androstenedione; DHEAS was higher in A and C, while SHBG lower in all phenotypes. Only 4% of phenotypes A, B and C had elevated only TT, which was significantly different in comparison to both D and Controls. Prevalence of elevated only DHEAS or androstenedione was the same in all phenotypes. The most common was presence of concomitantly high TT and androstenedione: A 23%, B 24%, C 15% while 0% in both D and Controls (p<0.05). A and C had higher prevalence of concomitantly high both TT and DHEAS (13% and 10%, respectively) in comparison to Controls (0%) and phenotype D (0%), (p<0.05). The prevalence of concomitantly elevated both androstenedione and DHEAS was the same in all groups.



Conclusion

In our PCOS population the most common hyperandrogenemia pattern is concomitant elevation of both TT and androstenedione. Low SHBG is a common feature in all PCOS phenotypes including phenotype D.