

COMPLETE BLOOD COUNT PARAMETERS IN GIRLS WITH POLYCYSTIC OVARY SYNDROME

S.Ahmet UÇAKTÜRK*,Fatma DEMİREL**,MELTEM TAYFUN*,Derya TEPE*,Selin ELMAOĞULLARI*,Özlem KARA*



*Ankara Children's Hematology and Oncology Training and Research Hospital, Pediatric Endocrinology Clinic, Ankara, Turkey

**Yıldırım Beyazıt University School of Medicine, Ankara Children's Hematology and Oncology Training Hospital, Pediatric

Endocrinology Clinic, Ankara, Turkey

Background: Polycystic ovary syndrome (PCOS) is characterized by ovulatory dysfunction and excess androgen secretion. Androgens may affect bone marrow cells via androgen receptor which expressed in the bone marrow. Also it is known that especially testosterone increases hemoglobin and hematocrit concentrations.

Our aim in this study is to describe the relation between hyperandrogenism and complete blood count (CBC) parameters in adolescents with PCOS.

Method: The study group was consisted of 80 cases. Forty adolescents with PCOS were compared with an age-and body mass index (BMI)-matched group of 40 obese girls without PCOS. The diagnosis of PCOS was made in accordance with criteria from Rotterdam Consensus. Body mass index (BMI) above 95 percentile for Turkish children was defined as obesity. BMI standard deviation score (BMI SDS) were calculated by the LMS method using published reference values for healthy Turkish children. BMISDS in PCOS and obesity groups were $2,56 \pm 0,78$ and $2,52 \pm 0,67$ respectively ($p>0,05$). The mean age of patients with PCOS was $15,2 \pm 1,4$ years, and in the obesity group it was $14,8 \pm 1,19$ years ($p>0,05$) (Table 1). Complete blood count parameters were compared between PCOS and obesity groups. Also the relationship between androgen levels and CBC parameters in the patients with PCOS was investigated.

Results: In PCOS patients, mean testosterone level was $0,75 \pm 0,18$ ng/mL, free testosterone level was $3,4 \pm 0,83$ pg/ml and dehydroepiandrosterone-sulfate (DHEAS) level was 294 µg/dL. CBC parameters showed no significant differences between the PCOS and obesity groups ($p>0,05$) (Table 2). There was no correlation between the level of testosterone, DHEAS and CBC parameters.

Conclusion: Effect of the testosterone on erythropoiesis depends on dosage. Low levels of endogenous androgens may not affect CBC parameters in patients with PCOS. Additionally it is shown that sTfR levels- directly proportional to the erythropoietic rate- are not increased in PCOS. For these reasons androgen-dependent enhancement of erythropoiesis is not likely to be seen in PCOS patients.

Table 1. Demographic features of the PCOS patients and control subjects (mean±SD)

	PCOS +OBESE	OBESE	p
n	40	40	
Age (years)	$15,2 \pm 1,4$	$14,8 \pm 1,1$	$p>0,05$
BMISDS	$2,56 \pm 0,78$	$2,52 \pm 0,67$	$p>0,05$

Table 2. Complete Blood count parameters in PCOS patients and control subjects (mean±SD)

	PCOS +OBESE	OBESE	p
Erythrocyte count ($10^6/\mu\text{L}$)	$5,03 \pm 0,66$	$4,85 \pm 0,32$	$>0,05$
Hematocrit (%)	$41,9 \pm 2,2$	$41,2 \pm 2,66$	$>0,05$
Hemoglobin level (g/dL)	$14,1 \pm 0,8$	$13,8 \pm 0,94$	$>0,05$
Platelet Count ($10^3/\text{MI}$)	283 ± 72	298 ± 52	$>0,05$
Mean platelet volume (fl)	$8,5 \pm 1,02$	$8,2 \pm 0,79$	$>0,05$