POLYCYSTIC OVARY SYNDROME IN CHILDBEARING WOMEN IN ANDIJAN: A CLINICAL, BIOCHEMICAL, AND HORMONAL ASSESSMENT

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Abstract: *Polycystic Ovary Syndrome (PCOS) is a multifaceted endocrine disorder affecting women of childbearing age, with implications for reproductive, metabolic, and psychological health. This study assesses childbearing women's clinical, biochemical, and hormonal profiles in Andijan, Uzbekistan. 200 women were randomly selected from the population for clinical evaluation, biochemical testing, and hormonal assays. Key findings include a high prevalence of insulin resistance, hyperandrogenism, and abnormal luteinizing hormone (LH) to follicle-stimulating hormone (FSH) ratios. These results highlight the need for region-specific healthcare interventions to address PCOS effectively.*

Keywords: *Polycystic Ovary Syndrome, Childbearing Women, Andijan, Clinical Assessment, Biochemical Profiles, Hormonal Imbalance.*

I. INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is one of the most common endocrine disorders, affecting 8–20% of women of reproductive age worldwide. [2] Characterized by hyperandrogenism, oligo-ovulation, and polycystic ovarian morphology, PCOS significantly impacts fertility and metabolic health. [3] In Central Asia, and particularly in Uzbekistan, limited data exist regarding the prevalence and characteristics of PCOS. This study aims to bridge this gap by focusing on women of childbearing age in Andijan, a region with unique cultural and healthcare dynamics. The study's objectives are to provide a comprehensive assessment of the clinical, biochemical, and hormonal parameters associated with PCOS and to offer insights into potential public health interventions.

II. LITERATURE REVIEW

Global studies have documented a strong association between PCOS and insulin resistance, dyslipidemia, and hormonal imbalances. [2, 4]However, research specific to

Uzbekistan or Central Asia remains sparse. Studies in similar socio-economic contexts suggest that lifestyle factors, limited healthcare access, and genetic predispositions may influence PCOS prevalence and presentation. [3] For instance, research conducted in Central Asian countries such as Kazakhstan and Kyrgyzstan highlights comparable prevalence rates and underscores the role of traditional dietary habits and limited awareness of reproductive health. Similarly, studies from rural areas in neighboring Afghanistan and Tajikistan reveal challenges in healthcare access and sociocultural factors influencing women's health, which may parallel the situation in Andijan. [5] This study builds on this foundation to explore PCOS in Andijan, addressing a critical gap in the regional literature.

III. METHODOLOGY

Study Design. This cross-sectional study involved 200 women of childbearing age (18-35 years) who were randomly selected from the population in Andijan. Participants were recruited through community outreach and local healthcare facilities.

Inclusion and Exclusion Criteria. Inclusion criteria included women aged 18-35 years with clinical symptoms of PCOS, such as irregular menstrual cycles or signs of hyperandrogenism. Exclusion criteria included pregnancy, lactation, and known endocrine disorders unrelated to PCOS.

Data Collection. Participants underwent comprehensive clinical evaluations, including BMI measurements and assessment of clinical symptoms such as hirsutism, acne, and alopecia. Biochemical tests measured fasting glucose, lipid profiles, and markers of insulin resistance. Hormonal assays evaluated testosterone, LH, FSH, and other relevant parameters.

Statistical Analysis. Descriptive statistics were used to summarize demographic and clinical characteristics. Independent t-tests and chi-square tests assessed differences between groups. Statistical significance was set at $p < 0.05$.

IV. RESULTS

Demographic and Clinical Characteristics: The average age of participants was 27.4 years. Approximately 65% had a BMI > 25 kg/m², indicating overweight or obesity. Common clinical symptoms included menstrual irregularities (78%), hirsutism (56%), and acne (45%).

Biochemical Profiles: Fasting glucose levels indicated insulin resistance in 62% of participants. Dyslipidemia was observed in 48%, characterized by elevated LDL cholesterol and low HDL cholesterol. [2]

Hormonal Profiles: Hyperandrogenism was evident in 70% of participants, with elevated total testosterone levels (mean: 2.3 ± 0.8 nmol/L). The LH/FSH ratio was abnormal (>2.0) in 64% of cases, consistent with typical PCOS findings (Norman et al., 2007).

V. DISCUSSION

This study confirms that PCOS is prevalent among childbearing women in Andijan, with clinical, biochemical, and hormonal profiles aligning with global trends. [1, 3] Insulin resistance and hyperandrogenism were prominent, underscoring the need for targeted interventions. The findings suggest that local lifestyle factors, such as dietary habits and physical inactivity, may exacerbate metabolic and reproductive issues. Furthermore, the socio-cultural dynamics in Andijan, including traditional gender roles, dietary customs, and limited opportunities for physical activity among women, might influence the prevalence and clinical presentation of PCOS. These factors could also contribute to delayed healthcare-seeking behavior, underlining the importance of culturally sensitive public health interventions. Additionally, limited awareness and access to specialized care may delay diagnosis and treatment. [5]

VI. **CONCLUSION**

PCOS poses a significant health challenge for childbearing women in Andijan, with high rates of insulin resistance, hyperandrogenism, and abnormal hormonal profiles. These findings call for enhanced public health strategies, including early screening programs, culturally tailored lifestyle interventions, and comprehensive training initiatives for healthcare providers. Additionally, policymakers should prioritize funding for community awareness campaigns and integrate PCOS management into primary healthcare services to ensure early diagnosis and intervention (Balen et al., 1995). Future research should explore longitudinal trends and the effectiveness of interventions in this population.

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