Clinical Hypothyroidism (SCH) Among Arab Women

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Abstract

Introduction: Polycystic ovary syndrome is a common endocrine disorder characterized by anovulation, hyperandrogenism and polycystic ovaries. These patients are at risks of a range of metabolic and reproductive disturbances. There is increasing evidence to suggest that PCOS is linked to thyroid diseases such as nodular goiter, autoimmune thyroiditis, and even subclinical hypothyroidism (SCH). The data on prevalence of SCH in PCOS is limited. On the other hand, Vitamin D is reported to play important role in modulating the PCOS phenotype, especially in the presence of thyroid dysfunction. In this study, we aimed to analyze the profile of PCOS in relation to SCH and vitamin D status in the Arab women. *Methods*: 249 Menstruating females between 18-45years fulfilling at least 2/3 of the Rotterdam criteria and clinical history were considered as PCOS participants, 154 Menstruating females between the ages 22-47 years were considered as controls. Participants with Known ovarian or endocrine disease were excluded from the study. *Data collection*: All participants were subjected to complete health checkup and undergo MRI examination of the pelvis, they were required to fill a questionnaire, provide blood sample for biochemical, hormonal, and metabolic indices. MRI findings were interpreted by a consultant radiologist and were classified according to a predefined classification system. *PCO classification system*: A novel PCO classification system depending upon the number of ovarian cysts and/or the volume of the ovaries was used to subclassify PCO groups into 10 distinct categories as PCO1-PCO10. *Statistical analysis*: Biochemical, hormonal, and radiological characteristics were summarized as counts and percentages. Bivariate analysis using chi-squared tests were performed to examine the association between these characteristics and two outcomes: PCOS status and PCO classification. P-value less than 0.05 was considered as significant. *Results and conclusion*: Our results highlight the distinct biomarker profiles and clinical characteristics between PCOS and non-PCOS participants and across PCO subtypes. Participants with PCOS tended to be younger, showed higher prevalence of menstrual irregularities and have lower average vitamin D levels compared to non-PCOS. Subtype specific patterns emerged suggesting that PCOS is heterogeneous with diverse clinical presentations and biomarker profiles – the subclassification of PCO allows for this distinction. This study highlights the importance of tailored management.

Keywords

Polycystic Ovary Syndrome, Subclinical Hypothyroidism, Magnetic Resonance Imaging, Cross-Sectional Study