

## Evolving endocrine and metabolic milieu of PCOS with aging

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**Context:** While clinical presentation, endocrine and metabolic profiles are well characterized in populations diagnosed with PCOS, the available data are overwhelmingly accrued in young women, with limited information available on the natural history of the disorder.

**Objective:** We herein attempt to determine if features of PCOS vary across a defined spectrum of chronological aging.

**Methods:** In a cross-sectional population of 2,595 premenopausal PCOS women, subjects were categorized into 3 groups by age: young (Y - 18-30 years, n=2116), middle (M-31-37 years, n=386) and late reproductive age (L - 38-50 years, n=93).

**Intervention(s):** It was not an interventional study.

**Main outcome measure(s):** The following parameters were available: age, Body mass index (BMI), blood pressure (BP), menstrual history, hirsutism severity, hormonal and metabolic data.

**Results:** In women with PCOS, hormonal and metabolic profile varied across the different age groups. Comparison of Y vs. M groups showed higher LH, DHEAS and lower estradiol concentrations in Y group. Y group presented better metabolic profile. When comparing M vs L groups we found higher DHEAS levels in M group and lower BMI, OGTT glucose concentrations. We also found significant differences between Y and L groups: higher LH, T, DHEAS, cortisol; lower E2, BP, fasting and OGTT glucose, TCh, LDL. The incidence of hypertension was highest in M group, whereas impaired glucose tolerance or diabetes was highest in L group.

**Conclusions:** While endocrine aberrations are more apparent in the young, metabolic deterioration dominates the profile of older women with PCOS. Our findings underscore the importance of ongoing surveillance of women with PCOS beyond the reproductive years and considerations for preventative interventions to minimize lifetime risk of cardiovascular morbidity that this population is deemed at risk for.

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