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Effect of ethnicity on the clinical presentation of women with Polycystic Ovary Syndrome; a 20-year retrospective cohort study

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Background

Polycystic ovary syndrome (PCOS) has a variety of signs and symptoms comprising different phenotypic presentations. Insulin resistance is known to be associated with PCOS. Despite the documented effect of ethnicity on insulin resistance, there is little known about the effect of ethnicity on the clinical presentations of PCOS. Our group has previously shown that the ethnicity did not have any significant effect on the cardiovascular outcomes in women with PCOS. We compared the clinical presentation of white and south Asian (SA) women with PCOS.

Methods

Design: Retrospective analysis of a multi-ethnic database of all women with PCOS presenting to a specialist clinical in UK 1988-2009

Participants: 2207 women (684 South Asian, 1523 white) with PCOS (mean age = 26.4 years [SD 7.6]).

Outcomes measures: Androgen criteria are defined as at least one of: hirsutism, acne, androgenic alopecia or documented increased free androgen index. Anovulation criteria are defined as oligomenorrhoea, amenorrhoea or infertility. Ethnicity was self-reported.

Findings

At presentation, SA women were younger than white women, had a lower metabolic risk profile (hypertension, smoking and body mass index) and less anovulation criteria, but were more likely to have diabetes, be from a deprived background and have androgen criteria (Table-1).

Table 1 - Characteristics of women with PCOS (Reported as Mean (SD) or % of that population)

Variable†	White(1523)	SA(684)	Total(2207)	P-Value(white vs SA)
Biomedical variables				
Age	27.3 (7.6)	24.5 (7.3)	26.4 (7.6)	**<0.001**
Hypertension Hx	10.4%	7.6%	9.5%	**0.023**
Smoking Hx	18.5%	3.7%	13.9%	**<0.001**
Body Mass Index	31.01 (7.9)	28.27 (6.5)	30.16 (0.19)	**<0.001**
Diabetes Hx	7.2%	9.5%	7.9%	**0.042**
Deprivation score	18.86 (14.9)	24.9 (14.4)	20.7 (15.0)	**<0.001**
Androgen criteria‡				
Any	85.4%	93.0%	87.7%	**<0.001**
Hirsutism	71.5%	84.6%	75.6%	**<0.001**
Acne	21.5%	20.5%	21.2%	0.306
Androgenic alopecia	3.9%	5.6%	4.4%	**<0.01**
Anovulation criteria				
Any	80.5%	74.4%	78.6%	**<0.01**
Oligomenorrhoea	57.1%	60.8%	58.3%	0.057
Amenorrhoea	18.7%	11.1%	16.4%	**<0.001**
Infertility	16.5%	13.5%	15.5%	**0.039**

†Abbreviations: BP=Blood Pressure, Hx=History, SA=South Asian
‡ Blood tests have not been included in the analysis as only 129 patients had recorded “high free androgen index”. Only patients without other hyperandrogenic criteria had a “documented” blood test.

Interpretation

There appears to be a significant affect of ethnicity on the clinical and phenotypic presentation of PCOS. Understanding these differences may help to tailor appropriate management in defined groups of patients with this condition.

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