

PCOS Daughters Show Altered Folliculogenesis

BY MICHELE G. SULLIVAN
Mid-Atlantic Bureau

BOSTON — The daughters of women with polycystic ovary syndrome have elevated levels of antimüllerian hormone from infancy to the perimenarchal period, suggesting that the underpinnings of PCOS may be present long before clinical symptoms develop.

Folliculogenesis may be altered in these girls, said Dr. Nicolas Crisosto of the University of Chile, Santiago, at the annual meeting of the Androgen Excess Society.

He compared anthropometric, hormonal, and metabolic parameters in 58 daughters of women with PCOS and in 65 daughters of control women at three time points: early infancy (2-3 months), childhood (4-7 years), and the perimenarchal period (8-15 years).

At each of the three time points, the girls received a physical exam that included assessment of weight, height, waist-to-hip ratio, and sexual development. A panel of tests was performed for serum hormone levels (gonadotropins, sex steroids, sex hormone-binding globulin, and antimüllerian hormone).

The girls in the perimenarchal group also underwent a transabdominal ultrasound exam of their ovaries.

There were no significant anthropometric differences between the daughters of women with PCOS and the daughters of controls at any of the exams, Dr. Crisosto said.

Antimüllerian hormone levels

were significantly increased in the daughters of women with PCOS at all three stages. Free androgen level was elevated in the daughters of the PCOS group at the perimenarchal exam.

Other values were similar for the two groups.

The mean antimüllerian hormone levels in infants were 20.4 pmol/L in the girls born to women with PCOS vs. 9.2 pmol/L in girls born to women without PCOS.

In childhood, the values for the two groups were 14.8 pmol/L and 7.7 pmol/L.

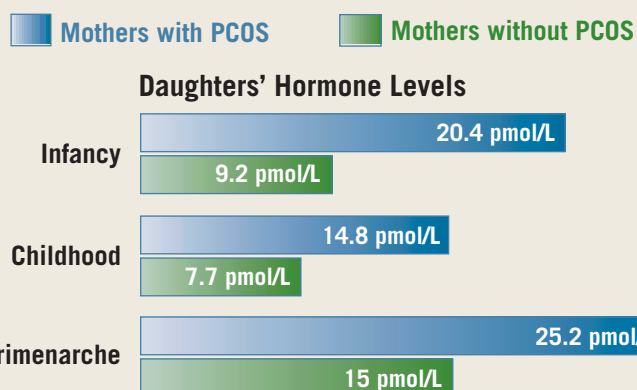
In the perimenarchal period, the respective values were 25.2 pmol/L vs. 15.0 pmol/L.

The results of the transabdominal ultrasound showed a slightly higher ovarian volume (8.8 cm³ vs. 6.8 cm³) in the daughters of women who had PCOS.

The findings, recently published in the *Journal of Clinical Endocrinology and Metabolism* (DOI:10.1210/jc.2005-2693), led Dr. Crisosto and his colleagues to conclude that serum antimüllerian hormone levels seem to be correlated with the development of preantral and small antral follicles, from puberty to the end of reproductive life.

Elevated serum antimüllerian hormone concentrations in daughters of women with PCOS during childhood, at a time when the gonadal axis is relatively quiescent and other hormonal markers of ovarian function are very low, suggests that antimüllerian hormone may potentially be used as an early marker of ovarian follicular development. ■

Mean Antimüllerian Hormone Levels Are Elevated in Daughters of Mothers with PCOS



Note: Based on a study of 123 patients.

Source: Dr. Crisosto

Sleep Apnea Related to Insulin Resistance in Women With PCOS

BY ROBERT FINN
San Francisco Bureau

SAN FRANCISCO — A high risk for sleep apnea was common in women with polycystic ovary syndrome and was linked to high fasting insulin levels, Dr. Esra Tasali reported at a conference sponsored by the American Diabetes Association.

Among the women with normal glucose tolerance, insulin levels in response to oral glucose were twice as high in the women at high risk for sleep apnea, compared with those who were at low risk.

This finding suggests that sleep apnea might worsen the metabolic consequences of insulin resistance, accelerating the conversion from normal to impaired glucose tolerance, Dr. Tasali said.

Although the study does not establish causation, Dr. Tasali recommended that women with polycystic ovary syndrome (PCOS) be systematically evaluated for sleep apnea because treatment of existing sleep apnea might improve glucose metabolism.

A high risk for sleep apnea was observed in 30 of 40 women with PCOS, and 92% of the women had sleep problems, according to Dr. Tasali and her colleagues at the University of Chicago (*J. Clin. Endocrinol. Metab.* 2006; 91:36-42).

Of the 40 women, 32 had previously been given an oral glucose tolerance test. Glucose tolerance was normal in 19 women.

In 22 women at high risk of sleep apnea, av-

erage fasting insulin levels were significantly higher (168 pmol/L) than they were in the 10 women at low risk of apnea (97 pmol/L), Dr. Tasali said.

Among the 13 women who had impaired glucose tolerance, glucose and insulin levels did not differ depending on their level of risk for sleep apnea.

Another cohort of eight women with PCOS underwent overnight polysomnography for symptoms suggestive of obstructive sleep apnea.

Mean sleep efficiency was 80% in the women with PCOS, compared with 92% in a control group of age-matched, nonobese women.

The women with PCOS also had significantly longer mean sleep latency (41 minutes compared with 10 minutes), and significantly shorter total sleep time (323 minutes compared with 442 minutes, a difference of almost 2 hours).

"Sleep apnea might be an intrinsic component of the metabolic disturbances that appear with polycystic ovary syndrome," Dr. Tasali said.

Furthermore, severity of sleep apnea as measured by the apnea-hypopnea index, and the degree of oxygen desaturations during rapid-eye-movement sleep, accounted for more than 90% of the variability in measures of glucose tolerance including hemoglobin A_{1c} levels.

Together, these findings could mean that both glucose tolerance and sleep apnea are strongly influenced by a common mechanism in women with PCOS.

Dr. Tasali disclosed that she had no conflict of interest related to her presentation. ■



Sleep apnea might be an intrinsic component of the metabolic disturbances that appear with PCOS.

DR. TASALI

Polycystic Ovarian Morphology May Not Mean an Increased PCOS Risk

BY MARY ELLEN SCHNEIDER
New York Bureau

BOSTON — Women diagnosed with polycystic ovarian morphology and normal menstrual cycles do not appear to be at significant risk for developing polycystic ovary syndrome, according to a study presented at the annual meeting of the Endocrine Society.

Researchers at Harvard University and Massachusetts General Hospital in Boston followed 40 women with regular menstrual cycles and either polycystic or normal ovarian morphology to see which women would develop polycystic ovary syndrome (PCOS).

The women were followed for 1.7-17.5 years after the initial ultrasound and given a follow-up ultrasound by the same ultrasonographic technician.

The researchers defined polycystic ovarian morphology (PCOM) as either an ovary with 12 or more follicles, ranging in size from 2 mm to 10 mm, in a single plane or an ovarian volume of more than 10 mL without a dominant follicle.

At baseline, 17 women had normal morphology and 23 were diagnosed with PCOM.

The average age at baseline was 30, and the average age at follow-up was 38, according to Meagan K. Murphy, a medical student at Harvard University who presented the results of the study.

At follow-up, 1 of the 17 women with normal ovarian morphology at the beginning of the study had developed PCOM.

Of the 23 women who had PCOM at baseline, about half had PCOM at follow-up and the rest had converted to normal ovarian morphology, Ms. Murphy said.

In those women who developed normal ovarian morphology, their follicle and ovarian volume decreased significantly.

One woman who was classified as having PCOM at baseline was diagnosed with PCOS by her physician. However, her menses became regular with weight loss and the previous diagnosis of PCOS was not confirmed within the study.

The development of PCOS is uncommon in women with PCOM and regular cycles, the researchers concluded. And a normal drop in follicle number with aging may result in women with PCOM developing normal cycles over time, Ms. Murphy said. ■