Androgen Levels Low in Women With Anorexia

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TORONTO — Although physicians commonly prescribe oral contraceptives for women with anorexia nervosa, new research presented at the annual meeting of the Endocrine Society suggests that androgen levels are already low in these women and are further reduced by the use of oral contraceptives.

But the jury is still out on the long-term consequences for skeletal health and body composition among women with the disease, said Dr. Karen K. Miller of Massachusetts General Hospital, Boston.

Dr. Miller and her colleagues performed a study analyzing androgen levels among 217 community-dwelling women in an effort to determine the physiologic consequences of prescribing oral contraceptives to women with anorexia nervosa.

The study included four arms comprised of 137 women with anorexia nervosa who were not receiving oral contraceptives; 32 women with anorexia nervosa who were receiving oral contraceptives; 21 women of normal weight with hypothalamic amenorrhea; and 27 healthy eumenorrheic controls.

The investigators found that the lowest free testosterone levels occurred among women with anorexia nervosa who were receiving oral contraceptives.

Women with anorexia nervosa all met DSM-IV criteria for anorexia nervosa, were less than 85% of ideal body weight, and all had an intense fear of gaining weight or denial of low weight.

Anorectic women not receiving oral contraceptives had been amenorrheic for at least 3 consecutive months and had not received hormonal contraceptives within the previous 3 months. Anorectic women who received oral contraceptives had to have been receiving them for at least 3 months.

All women with hypothalamic amenorrhea were 90%-110% of ideal body weight; amenorrheic for at least 3 months; had normal FSH, prolactin, testosterone, and free testosterone levels; an LH-to-FSH ratio of less than 2.5; absence of hirsutism; and no history of an eating disorder.

Healthy controls were 90%-110% of ideal body weight and eumenorrheic. Controls were excluded from the study if they had a history of amenorrhea or an eating disorder, had a history of any major medical illness, or had used oral contraceptives within the last 3 months.

The mean body mass index (BMI), percent ideal body weight, percent fat, total fat mass, and fat-free mass were all lower in the anorexia nervosa groups, compared with women who had hypothalamic amenorrhea and healthy controls.

An analysis of the androgen levels among the four groups found that total testosterone levels were lower in women with anorexia nervosa than in healthy controls. The levels of total testosterone were similar in anorectic women who received oral contraceptives and those who did not. The total testosterone levels were normal in women with hypothalamic amenorrhea, Dr. Miller said.

Free testosterone levels were lower in women with anorexia nervosa than in healthy controls, and the lowest levels occurred among women with anorexia nervosa who were receiving oral contraceptives. The levels were normal in women with hypothalamic amenorrhea.

The researchers also found that dehydroepiandrosterone (DHEAS) levels were lower only in women with anorexia nervosa receiving oral contraceptives, compared with healthy controls. DHEAS levels were normal in women with anorexia nervosa not receiving contraceptives and in women with hypothalamic amenorrhea.

Free testosterone levels were found to be predictors of bone mineral density and body composition in women with anorexia nervosa, hypothalamic amenorrhea, and healthy controls. DHEAS levels also predicted bone density, but were weaker predictors than free testosterone and did not predict fat-free mass, Dr. Miller said.

Intervention studies are now needed to determine the relationship between androgens and bone density and body composition among women with anorexia nervosa, Dr. Miller said. Studies are also needed to determine whether oral contraceptive use is harmful to skeletal health in these women, she said. ■