

# Depression Risk Rises During, After Menopause

BY DOUG BRUNK

SAN DIEGO — The risk of a major depressive episode more than doubles for women during and after the menopausal transition, compared with when they were premenopausal, results from a 9-year follow-up study showed.

The finding suggests that clinicians “need to pay attention to depressive symptoms during this time in a woman’s life, and perhaps do a more extensive assessment both in terms of the current presentation and a history of depression, so they have a better understanding of what the overall risk is for a major depressive episode and how they might intervene to prevent it,” the study’s principal investigator, Joyce T. Bromberger, Ph.D., said in an interview at the annual meeting of the North American Menopause Society.

She and her associates analyzed 9 years of follow-up data from 221 premenopausal women enrolled at the Pittsburgh site of the Study of Women’s Health Across the Nation, a multisite epidemiologic study designed to examine the health of women during midlife. The researchers used the Nonpatient Structured Clinical Interview for DSM-IV Axis I Disorders at baseline to determine lifetime history of major depression and

annually to assess current and past-year major depression. They classified the women’s status according to self-reported bleeding criteria as premenopausal, perimenopausal, postmenopausal, and postmenopausal on hormones.

Covariates included race, history of major depression at baseline, time-varying age, stressful life events such as the loss of a spouse or a job, use of psychotropic medications, and hot flashes/night sweats. Women who reported a bilateral oophorectomy or hysterectomy were not included in the analyses after the procedure.

At baseline the women were between the ages of 42 and 52, reported Dr. Bromberger, associate professor of epidemiology and psychiatry at the University of Pittsburgh. Of the 221 women, 129 (58%) transitioned to postmenopause over the 9 years and 69 (31%) experienced at least one major depressive episode. Nearly half of women with a history of a major depression at baseline (47%) met criteria for current or past-year major depression, compared with 23% of women without a history of major depression at baseline.



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DR. BROMBERGER

Univariate analyses demonstrated that the greatest risk for having a major depressive episode occurred when women were postmenopausal (odds ratio 3.52) or when they were perimenopausal (OR 2.13), compared with when they were premenopausal.

In the fully adjusted multivariate analyses, women remained significantly more likely to have a major depressive episode when they were postmenopausal (OR 3.79) or perimenopausal (OR 2.05). Odd ratios were also significantly greater for African American women (OR 2.10), women with a history of depression (OR 2.97), and women who reported stressful life events (OR 2.90).

“I was surprised by the increased risk during the postmenopause, because the majority of the literature on depressive symptoms has suggested that the increased risk is during the [menopausal] transition, and not after it,” Dr. Bromberger said.

The study was funded by the National Institute on Aging, the National Institute of Mental Health, and the National Institute of Nursing Research. ■

## Abdominal Ultrasound May Help Diagnose PCOS in Teens

BY MIRIAM E. TUCKER

NEW YORK — Ovarian volume assessed by transabdominal ultrasound correlated strongly with serum testosterone levels in a study of 39 adolescent girls undergoing evaluation for polycystic ovary syndrome.

While magnetic resonance imaging and transrectal or transvaginal ultrasound (TVUS) may better visualize ovarian follicles, transabdominal ultrasound (TAUS) is a less invasive, cheaper, and more readily available imaging modality to diagnose polycystic ovary syndrome (PCOS), Dr. Clare A. Flannery said in a poster presented at a joint meeting of the Lawson Wilkins Pediatric Endocrine Society and the European Society for Pediatric Endocrinology.

With TAUS, the ovarian volume—the sum of the stromal volume and multiple follicles—can be easily calculated from the three dimensions of the ovary. Elevation of serum testosterone, a well-validated diagnostic criterion for PCOS, has been shown to correlate with typical PCOS using TVUS but little is known about how accurately it relates to increased ovarian volume in TAUS, said Dr. Flannery of the department of endocrinology-internal medicine at Yale University, New Haven, Conn.

The 39 adolescents had a mean age of 15.3 years, a mean body mass index of 31.5 kg/m<sup>2</sup>, and all had clinical features suggestive of PCOS, for which they had been referred to the Yale Multi-disciplinary Adolescent PCOS Program (MAPP), directed by senior author Dr. Tania S. Burgert.

They underwent TAUS that was read by a radiologist blinded to all clinical information. Ovarian volume was calculated with three diameter measurements, and total ovarian volume was obtained by adding the volume of both ovaries. They had a mean total ovarian

volume of 23.2 cm<sup>3</sup> (range 2.5-50.2 cm<sup>3</sup>), whereas the mean single largest ovary volume was 14.3 cm<sup>3</sup> (range 1.3-30.7 cm<sup>3</sup>), indicating that asymmetrical ovarian enlargement was not uncommon, Dr. Flannery said.

Total testosterone levels correlated with both single largest ovary volume and total ovarian volume, as did free testosterone. When ovarian volume was analyzed on a continuum, adolescents whose ovaries were less than 10 cm<sup>3</sup> in volume had a 77% likelihood of having normal testosterone (less than 50 ng/dL).

Differences were seen between the 18 obese (body mass index greater than 30), 12 overweight (BMI of 25-29.9), and 9 lean (less than 25) patients. The overweight and obese groups had lower sex hormone-binding globulin than did the lean group (37 nmol/L and 27 nmol/L, respectively, vs. 66 nmol/L in the lean group). They also had greater insulin resistance, as measured by the homeostasis assessment model (5.1 and 3.3, vs. 2.0 in the lean group).

Total testosterone levels were not statistically different between the three BMI groups. Everyone in the lean group had at least one enlarged ovary, as did slightly over half of the overweight and obese groups. Bilateral ovarian enlargement was present in 33%-44% of the girls in each group.

In an interview, Dr. Flannery said that most of the adolescent girls referred to their specialty clinic are obese with symptoms that may be consistent with signs of puberty. It is a challenge to differentiate between girls with early or established PCOS versus girls with just obesity and insulin resistance. Examination of ovarian morphology provides another tool for diagnosis, she said.

Dr. Flannery stated that neither she nor Dr. Burgert had any financial disclosures. ■

## Mother’s Bariatric Surgery Yields Healthier Offspring

BY BRUCE JANCIN

GRAPEVINE, TEX. — Obese women who have bariatric surgery prior to pregnancy have less complicated gestations and their children are markedly less obese than are siblings born prior to the surgery, according to a Canadian study.

“Less obesity is not even the most important finding—it’s the improvement in their metabolic condition. Children born after their mother’s surgery had 30% less insulin resistance compared to their brothers and sisters born before the surgery,” Dr. Picard Marceau reported at the annual meeting of the American Society for Metabolic and Bariatric Surgery.

The implication of these findings is that the propensity to develop obesity and the metabolic syndrome is transmitted through the generations not only via genetic factors, but also epigenetically through the intrauterine environment, said Dr. Marceau of Laval University, Quebec City.

He and his coworkers studied 37 very obese mothers who collectively gave birth to 56 children prior to undergoing a biliopancreatic diversion with duodenal switch (BPD) for weight loss and another 54 children afterward. The investigators added another 10 morbidly obese women who had all 23 of their children prior to the BPD and 10 others who had all 19 of their children post surgery. Children born before the mother’s bariatric surgery have been prospectively fol-

lowed on average to age 19 years, while those born post surgery have been followed to age 10.

The mothers’ preoperative body mass index averaged 48.5 kg/m<sup>2</sup>; 15 years after surgery, it was 31.4. Moreover, their blood glucose levels at follow-up were 20% lower than presurgically, their triglyceride and LDL cholesterol levels were down by more than 50% each, and HDL levels were up by 40%.

Bariatric surgery had a dramatic effect on the course of subsequent pregnancies. Pregnancies prior to surgery were marked by 12 cases of gestational diabetes, 9 of preeclampsia, and 15 of hypertension requiring antihypertensive therapy; pregnancies after surgery had none. Gestational weight gain averaged 13.8 kg/m<sup>2</sup> in the presurgical period and 6.8 kg/m<sup>2</sup> in the postsurgical era.

The birth weight of the children born after mom’s surgery was 17% lower than that of their siblings born prior to surgery.

The effects of the salutary postsurgical intrauterine environment differed somewhat by sex. In boys, it was manifest mainly as less weight gain; boys born after the mother’s surgery had an 86% lower prevalence of obesity than did their older brothers. But the main effects noted in girls born after the mother’s surgery were a 40% reduction in insulin resistance and a 35% decrease in percent body fat compared with their sisters born presurgically.

The study was supported by the Canadian Institute of Health Research. ■