Bariatric Surgery Slashes Pregnancy Hypertension

BY JENNIE SMITH

Women who have had bariatric surgery are far less likely to experience serious hypertensive disorders during pregnancy, including pre-eclampsia and eclampsia, than women who have yet to undergo the surgery, according to new research.

Investigators found a 75% reduction in the odds of being diagnosed with a hypertensive disorder in pregnancy in those who had undergone the surgery, compared with their counterparts.

For their study, Dr. Wendy L. Bennett and colleagues at the Johns Hopkins University School of Medicine, Baltimore, evaluated claims data from 7 private insurance plans to find 585 U.S. women between the ages of 16 and 45 who had undergone bariatric surgery for weight loss and had at least one prior pregnancy and delivery (BMJ 2010 Apr. 13;340:c1662 [doi: 10.1136/bmj.c1662]).

A total of 269 of the women delivered their babies before gastric bypass surgery or another weight-loss surgery, and 316 delivered afterward. For the first group, the mean time from delivery to surgery was 17.9 months, and for the second, the mean time from surgery to delivery was 23.6 months. Gastric bypass surgery accounted for 81.5% of procedures overall, with other surgeries, such as adjustable gastric banding, making up the rest. The mean age of the women was 31.9 years at delivery and 31.5 years at surgery.

In the group that delivered before having surgery, 31.2% of the women were diagnosed with a hypertensive disorder—from chronic and gestational hypertension to pre-eclampsia and eclampsia alone or superimposed on hypertension—between the start of pregnancy and two weeks after birth, while only 9.8% of the post-surgery group did, even after adjusting for factors such as age at delivery, multiple pregnancy, the type of surgery, and pre-existing diabetes.

Pre-eclampsia or eclampsia was diagnosed in 14.5% of women in the presurgery group and 2.5% in the post-surgery group. "We went 2 weeks postpartum, because we wanted to make sure we got all the diagnoses," Dr. Bennett said in an interview. "Women can get postpartum pre-eclampsia."

The Hopkins findings confirm those from an earlier Israeli study of similar design (Int. J. Gynecol. Obstet. 2008; 103:246-51), which found the rate of a composite of hypertensive disorders during pregnancy to be more than halved after bariatric surgery.

The Hopkins team saw an even more dramatic reduction—about 75%—in the odds of all hypertensive disorders in pregnancy, and was able to isolate all severities of hypertensive disorders by analyzing outpatient and inpatient codes for each. Further, Dr. Bennett and colleagues wrote that they were "able to describe outcomes of chronic hypertension complicating a pregnancy and pre-eclampsia superimposed on chronic hypertension among women who have had bariatric surgery." Chronic hypertension in pregnancy and pre-eclampsia, the authors noted, can increase the long-term risk of chronic disease in the mother, including cardiovascular and renal disease.

Dr. Bennett noted that her team reviewed relatively new and geographically diverse data (the claims were dated from 2002 to 2006, from more than one region of the United States), compared with other recent studies on bariatric surgery and pregnancy. This afforded the authors an up-to-date picture reflecting outcomes from surgeries currently performed, she said.

The team's dataset lacked height and weight information for subjects before and after surgeries, though all had been diagnosed as obese (body mass index of 35 kg/m^2 or higher) before being scheduled for surgery. However, Dr. Bennett said, "We certainly believe it's the weight loss leading to reduced hypertension risk."

The authors noted a further limitation to their study, which was the possibility of selection bias and confounding by indication. For example, they wrote, "an obese woman with gestational hypertension might have been more likely to subsequently undergo bariatric surgery if she developed chronic hypertension after her pregnancy or had other comorbidities associated with obesity making her eligible for bariatric surgery. If this occurred, the number of diagnoses of hypertensive disorder in pregnancy in the women who delivered before surgery could be increased and bias our results."

None of the authors declared any conflicts of interest. ■

Ambulatory BP Monitors Helpful in Children

BY M. ALEXANDER OTTO

SEATTLE — Take-home, ambulatory blood pressure monitors for children ensure more accurate blood pressure assessments and rule out white-coat hypertension, nephrologists at Seattle Children's Hospital's hypertension clinic have found.

The clinic ruled out white-coat hypertension in about 30%-40% of the roughly 200 children sent home with the monitors in 2009, according to Dr. Jodi Smith of the clinic.

Although more expensive than an office blood pressure reading, "if used as first-line, before doing a bunch of other diagnostic tests, it can decrease costs" overall, Dr. Smith said at a conference sponsored by the North Pacific Pediatric Society.

The clinic uses ambulatory monitors made by SpaceLabs Medical, Inc., of Issaquah, Wash. They cost about $3,000 each.

Dr. Smith, along with her nephrologist colleagues, sees patients in the hospital's hypertension clinic due to the correlation of pediatric hypertension and renal problems. The hypertension clinic started using the monitors about a year ago, switching from office readings and automated blood pressure cuffs that caretakers used to take a few measurements a day at home.

The units consist of a blood pressure cuff and an iPod-sized monitor that is worn around the waist and easily concealed under a sweatshirt. The cuffs inflate every 20-30 minutes for 24 hours. Older children adapt well to the frequent squeezes, Dr. Smith said, but the approach would not be appropriate for children under age 7.

The read-outs go far beyond a listing of systolic and diastolic pressures, and are complicated to interpret, she said. "They look for patterns," including blood pressure load, and the presence—or not—of a normal drop in blood pressure at night.

Children also keep an activity log, so a spike in blood pressure during a soccer game, for instance, isn't misinterpreted.

Although more expensive than an office blood pressure reading, 'if [an ambulatory monitor is] used as first-line, before doing a bunch of other diagnostic tests, it can decrease costs' overall.

It's a first-line assessment at the clinic, especially to confirm hypertension in otherwise healthy children.

Schedulers get prior insurance authorization for an ambulatory monitor before the child comes in, so they can be sent home with one after the first visit.

Her clinic matches readings to a chart in the National Heart, Lung, and Blood Institute's Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents (Pediatrics 2004;114:555-76).

"We get calls all the time [from pediatricians wondering] what's normal and what's not," she said. "Normals change through childhood. It is hard to define what level is dangerous."

The chart helps. At her clinic, blood pressures at or above the 90th percentile trigger intervention. Kids who fall between the 90th and 94th percentile are considered pre-hypertensive, the point at which lifestyle changes are initiated along with medication if there are comorbidities.

At or above the 95th percentile, children are deemed hypertensive. Treatment and drug selection depends on cause, symptoms, the presence of end-organ damage or diabetes, and other considerations.

With increasing rates of obesity, primary hypertension is on the rise in the pediatric population, but hypertensive children are still more likely than adults to have definable causes for the condition.

Renal problems are most likely, followed by renovascular, endocrine, and genetic problems, Dr. Smith said.

Although rare, post-streptococcal glomerulonephritis is the most common cause of acute glomerulonephritis in kids. Other causes of acute nephritis, with more uncertain outcomes—lupus, bacterial endocarditis, shunt nephritis, membranoproliferative glomerulonephritis—will typically depress both C3 and C4.

IgA nephropathy and Henoch-Schönlein purpura nephritis are associated with normal C3 and C4, said Dr. Smith, who had no conflicts of interest to report. ■

Framingham Risk High in Diabetics

SNOWMASS, COLO. — Optimal control of cardiovascular risk factors in diabetic patients in the community setting remains an elusive goal, according to the most recent data from the Framingham Heart Study.

Persons with diabetes have two to three times the rate of cardiovascular disease than do those without the disease. Aggressive control of their cardiovascular risk factors is essential to overcome this markedly increased risk. But the Framingham experience shows that it is not happening, Dr. Patrick O'Gara said at a conference sponsored by the American College of Cardiology.

A bright spot is the low prevalence of cigarette smoking, down to just under 13% during 2000-2005 in 60-year-olds with diabetes in Framingham, said Dr. O'Gara of Brigham and Women's Hospital, Boston.

Hypertension is another story altogether. The prevalence of hypertension among 60-year-olds with diabetes in 2000-2005 was 87%, more than twice that of nondiabetic individuals, and essentially unchanged since 1970.

The rate of controlled hypertension was less than 27% in 60-year-old diabetic men and women in Framingham during 2000-2005, compared with 46% in those without diabetes (Circulation 2009;120:212-20).

Only 40% of diabetic individuals with high LDL cholesterol had it controlled to guideline target levels in 2000-2005. However, that's better than the 32% rate among those without diabetes, Dr. O'Gara noted.

Lastly, the prevalence of obesity among diabetic 60-year-olds in 2000-2005 was more than 67%, up sharply from 46% during the prior decade.

The Framingham Heart Study is funded by the National Heart, Lung, and Blood Institute. Dr. O'Gara had no relevant financial interests.

—Bruce Jancin