Pulmonary Stenosis Ups Obstetric Risks

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STOCKHOLM — Pregnancy in women with isolated congenital pulmonary valve stenosis is associated with an extremely high rate of obstetric and fetal complications, Willem Drenthen, M.D., reported at the annual congress of the European Society of Cardiology.

The specific nature of these complications varies depending on whether the congenital heart defect was surgically corrected before pregnancy, said Dr. Drenthen of University Medical Center, Groningen, the Netherlands.

It has generally been assumed that pregnancy in women with isolated congenital pulmonary valve stenosis is well tolerated. Data from a Dutch national registry indicate otherwise. The registry has documented 81 completed pregnancies in women with this congenital heart defect. A total of 44 cases involved those whose valvular anomaly was surgically corrected before pregnancy. Women who had not undergone surgery had only a mild pulmonary valve gradient.

Roughly 60% of the pregnancies involved at least one obstetric and/or neonatal complication. Particularly striking were the high incidence of pregnancy-induced hypertension in women with uncorrected congenital pulmonary valve stenosis, as well as the markedly elevated rates of preterm labor, preterm delivery, and postpartum hemorrhage in patients with a corrected heart defect. (See chart.) Four percent of newborns had congenital heart disease. The neonatal mortality rate was 5%, with deaths due to immaturity, meningitis, and hydrocephalus combined with prematurity. ■

Pregnancy Complications With Congenital Pulmonary Valve Stenosis

	Corrected (n = 44)	Uncorrected (n = 37)
Mean birth weight	2,883 g	3,346 g
Pregnancy duration	38 weeks	40 weeks
Complications		
Pregnancy-induced hypertension	5 (11%)	11 (30%)
Infection requiring antibiotics	8 (18%)	6 (16%)
Premature rupture of membranes	5 (11%)	0
Preterm labor	9 (21%)	2 (5%)
Preterm delivery	11 (25%)	2 (5%)
Postpartum hemorrhage	9 (21%)	4 (11%)
Thromboembolic complications	3 (7%)	0

Note: Patients may have multiple complications.
Source: Dr. Drenthen

Autoantibodies Play Key Role in Cardiomyopathy

STOCKHOLM — Autoantibodies directed against the β_1-adrenergic receptor appear to play a role in the pathogenesis of postpartum cardiomyopathy, Gerd Wallukat, M.D., said at the annual congress of the European Society of Cardiology.

Evidence has implicated autoantibodies against the β_1-adrenergic receptor in the development of dilated cardiomyopathy. In light of that, Dr. Wallukat and coworkers sought evidence of a similar phenomenon in 26 women with postpartum cardiomyopathy.

They found it. Serum obtained when the women presented in New York Heart Association functional class III or IV with postpartum cardiomyopathy did show such autoantibodies in all 26 patients and in none of a healthy age-matched control group. The autoantibodies appeared to have a dose-dependent agonist effect, said Dr. Wallukat of the Max Delbrück Center, Berlin.

The autoantibodies were identified using a bioassay that utilized cultured, spontaneously beating, neonatal rat cardiomyocytes, which beat faster on β-adrenergic stimulation. Prolonged exposure did not desensitize the β_1-adrenergic receptors.

The agonist effect was inhibited in vitro by β_1-adrenergic receptor antagonists, which explains the improvement of postpartum cardiomyopathy patients when treated with β-blockers.

Sera obtained after 6 months showed a sharp reduction in autoantibody activity. This improvement was paralleled in the New York Heart Association functional class and cardiac function in 24 of the 26 women.

—Bruce Jancin