CORRESPONDENCE

Postpartum Cardiomyopathy:

A Cardiac Emergency for Gynecologists, General Practitioners, Internists, Pulmonologists, and Cardiologists

by Prof. Dr. Denise Hilfiker-Kleiner, PhD, Dr. med. Elisabeth Schieffer,

PD Dr. med. Gerd Peter Meyer, Dr. med. Edith Podewski,

Prof. Dr. med. Helmut Drexler in volume 44/2008

Case Numbers Are Tiny

Even after reading the lead article extremely I can only conclude that a possible positive effect of bromocriptine on the course of this condition is not even probable. It is a fact that the pregnancy and breastfeeding periods are characterized by weakened immunity. Stress factors such as birth, sleep deprivation, exhaustion, and unfavorable socioeconomic conditions can aggravate this situation. These factors in combination provide enough reason for acquiring a viral infection after the birth, which may take a fulminant course and develop, for example, into myocarditis. It is obvious that treatment should then adhere to the guidelines of the German Society of Cardiology. A conclusion is reached before the proof has been found. The cited studies have tiny case numbers. Before drawing conclusions—as in the South Africa study—from the allegedly successful treatment of 6 (!) patients, a thorough medical history of these women should be taken. How much time passed after the birth, which NYHA category were they in before the birth, etc.

Even if the groups were comparable, the case numbers are still too small to draw statistical conclusions.

None of the studies documented whether the women were breast feeding, and if they did, for how long. Was weaning done by using medication such as bromocriptine or cabergoline? Of the 6 patients from Germany in whom "bromocriptine as an attempt to cure" was used, all had notably improved pump function 6 months later, but a control cohort was lacking. In the article's introduction, the authors reported that 80% made a good recovery anyway. I was amused by the investigations of serum concentrations of oxidized low density lipoprotein as an indicator for oxidative stress and activity of the prolactin cleaving enzyme cathepsin D. PPCM patients had a strongly raised titer compared with healthy, breastfeeding mothers. It would be interesting to know whether the mothers with cardiac failure were actually fully breast feeding. Maybe a high concentration of prolactin as an indicator for successful breast feeding has a protective function? As long as no clear scientific proof has been provided for the recommendation to consider prolonged treatment with bromocriptine, I would advise the utmost caution in disrupting the unity of mother and baby by disrupting their breastfeeding bond. Abrupt cessation of breast feeding might even result in a deterioration of the pathology owing to psychological stress.

DOI: 10.3238/arztebl.2009.0190

REFERENCES

1. Hilfiker-Kleiner D, Schieffer E, Meyer GP, Podewski E, Drexler H: Postpartum cardiomyopathie: a cardiac emergency for gynecologists, general practitioners, internists, pulmonologists and cardiologists. *Dtsch Arztebl Int* 2008; 105(44): 751–6.

Dr. med. Swana Swalve-Bordeaux

Bahnhofstr. 11

24340 Eckernförde, Germany

swalve-bordeaux@gmx.de

Embolizing Into All Organs

Postpartum cardiomyopathy was described as long as 50 years ago by W R Meadows (1), who referred to Hull (2). He concluded (in 1957) by saying: "The syndrome of idiopathic myocardial failure occurring in the last trimester of pregnancy or the puerperium is characterized by symptoms of congestive failure, which, early, is predominantly left sided, chest and abdominal pain, embolic phenomenon in 25 to 40 per cent, acute hypertension, gallop rhythm, generalized dilatation of the heart, and T-wave inversion. Pathologic findings, which resemble similar cases unrelated to pregnancy, consist of a soft, flabby, dilated myocardium, ventricular mural thrombi, endocardial thickening of variable extent, and focal and diffuse areas of myocardial necrosis especially in the subendocardial portion of the ventricular wall. Approximately two thirds of the cases make complete clinical recoveries, but the syndrome tends to recur with subsequent pregnancies" (2).

In my opinion, the cause of pregnancy specific cardiomyopathy is not defined by weakened immunity/autoimmunization, viral infections, vitamin deficiencies, skin color, or other speculative hypotheses; it is not multifactorial. Consistent indicators mentioned in the literature are clinical and cardiological embolic findings.

To my mind, the inevitable conclusion is that chorionic villi that have grown into the uterine wall—placenta accreta or increta—are the cause of PPCM, which are organized, resorbed, and mobilized in myriad ways into all organs. Functionally this is obvious in the brain (visual impairments, eclampsia/pre-eclampsia) and through sudden cardiac failure.

A placenta accrete cannot be removed completely by curettage. In a scenario of cesarean section this automatically means that a hysterectomy has to be performed. And if the postpartum course is life threatening, this means extirpation of the uterus to save the mother's life—rather than the measure of last resort, the cardiac transplantation.

DOI: 10.3238/arztebl.2009.0191a

REFERENCES

1. Meadows WR: Idiopathic myocardial failure in the last trimester of pregnancy and the puerperium. *Circulation* 1957; 15: 903–14.
2. Hull E, Hafkesbring F: Toxic postpartal heart disease. *New Orleans Med Surg J* 1937; 89: 550–7.

3. Hilfiker-Kleiner D, Schieffer E, Meyer GP, Podewski E, Drexler H: Postpartum cardiomyopathie: a cardiac emergency for gynecologists, general practitioners, internists, pulmonologists and cardiologists]. *Dtsch Arztebl Int* 2008; 105(44): 751–6.

Prof. Dr. med. Jürgen Stoffregen

Im Ostkamp 19 b
59427 Unna, Germany
jurgenstoffregen@gmx.de

In Reply:

For reasons of limited space, we cannot respond to all aspects that Dr Swalve-Bordeaux raised in her letter and therefore refer interested readers to our publications (1, 2, 3). However, we wish to emphasize, that in severe postpartum cardiomyopathy with a high case fatality and a high risk of irreversible cardiac failure, immediate therapy with beta blockers and ACE inhibitors is indicated. ACE inhibitors can be passed to the neonate in breast milk. Cessation of breast feeding is thus indicated; quite apart from the fact that in many cases the women are in severe cardiac failure needing intensive care and are therefore hardly able to breast feed. In a scenario of 15–20% mortality and 50% persistent symptoms of cardiac failure (complete recovery occurs in only 30%), the main focus should be on treating the mother, aiming on her recovery to ensure that a good bond between mother and child can develop over the longer term.

If weaning is required in this situation for clinical-pharmacological reasons, then bromocriptine is the medication of choice. Our observations imply that prolonged treatment with bromocriptine over 2 months in addition to standard therapy of heart failure results in a substantial recovery in cardiac function. We now have data from 11 patients with a mean rise in ejection fraction of 25% to 52% after 6 months. In 10 patients who only obtained standard therapy of heart failure without bromocriptine, the mean ejection fraction had risen from 23% to 26.5%. Colleagues at the Charité in Berlin and Göttingen University Hospital were so impressed with our results that they now apply the new option in patients with severe postpartum cardiomyopathy, and very successfully so. We emphasized in our article—and we repeat this here—that at this point in time, additional treatment with bromocriptine is not established, but in

our opinion, and in agreement with all cardiology experts, it is justified to test this new therapeutic principle in a randomized multicenter study. This clinical trial will start in early 2009.

Prof Stoffregen relies on initial studies of cardiomyopathy in drawing up the clinical practice and pathological cardiac finding in analogy to our characterization. However, he did not provide any "compulsory proof" for his personal theory of the pathomechanism of this disorder. There is no consistent histopathological documentation for embolization of chorionic villi in the heart, nor are other organs affected accordingly. The—rather heroic—hysterectomy prevents with absolute certainty another pregnancy and the associated risk of cardiomyopathy.

Which patient or treating physician would prefer for the treatment of severe postpartum cardiomyopathy the extirpation of the uterus, whose effectiveness has never been studied, to bromocriptine treatment, whose initial results have been encouraging?

DOI: 10.3238/arztebl.2009.0191b

REFERENCES

1. Hilfiker-Kleiner D, Kaminski K, Podewski E et al.: A cathepsin D-cleaved 16 kDa form of prolactin mediates postpartum cardiomyopathy. *Cell* 2007; 128: 589–600.
2. Hilfiker-Kleiner D, Meyer GP, Schieffer E et al.: Recovery from postpartum cardiomyopathy in 2 patients by blocking prolactin release with bromocriptine. *J Am Coll Cardiol* 2007; 50: 2354–5.
3. Hilfiker-Kleiner D, Sliwa K, Drexler H: Peripartum cardiomyopathy: recent insights into its pathophysiology. *Trends in Cardiovasc Med* 2008; 18: 173–9.
4. Hilfiker-Kleiner D, Schieffer E, Meyer GP, Podewski E, Drexler H: Postpartum cardiomyopathie: a cardiac emergency for gynecologists, general practitioners, internists, pulmonologists and cardiologists]. *Dtsch Arztebl Int* 2008; 105(44): 751–6.

Prof. Dr. med. Helmut Drexler

Klinik für Kardiologie und Angiologie
Medizinische Hochschule Hannover
Carl-Neuberg-Str. 1
30625 Hannover, Germany
Drexler.Helmut@MH-Hannover.de

Conflict of interest statement

The authors of all letters and of the reply declare that no conflict of interest exists according to the guidelines of the International Committee of Medical Journal Editors.