CORRESPONDENCE

Cardiovascular Diseases in Pregnancy

by Prof. Dr. med. Vera Regitz-Zagrosek, Dr. med. Ute Seeland, Prof. Dr. med. Annette Geibel-Zehender, Dr. med. Christa Gohlke-Bärwolf, Dr. med. Irmtraut Kruck und Dr. med. Christof Schaefer
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4. Regitz-Zagrosek V, Seeland U, Geibel-Zehender A, Gohlke-Bärwolf C, Kruck I, Schaefer C: Cardiovascular diseases in pregnancy. Dtsch Arztebl Int 2011; 108(16): 267–73.

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Conflict of interest statement
The author declares that no conflict of interest exists.

Not Helpful

The authors' one-sided description of available options for anticoagulation in pregnancy is not helpful.

- None of the cited articles allows the conclusion that <3 mg phenprocoumon/day is unproblematic; this has never been studied.
- In the cited study by Schaefer et al, actual embryopathies were reported—particularly in association with phenprocoumon, the most commonly used anticoagulant in Germany.
- The Schaefer et al study reported a miscarriage rate of 42% with coumarins; Regitz-Zagrosek et al did not mention this at all.
- Chan et al reported a rate of warfarin related embryopathies of 6.4%, a rate of spontaneous abortions of 24.8%, and a rate of fetal losses and neonatal deaths of 26.5% (1).
- Another study showed that in the long term, coumarin during pregnancy results in lowered intelligence in the ensuing children.

Women planning to become pregnant should be switched to a therapeutic dose of low-molecular weight heparin in good time before conception. This is safe, according to the current literature, and is not associated with an increased risk of thromboembolism if the appropriate dosage is selected (2× daily, adapted to weight, 100 anti-Xa-units per kg body weight) (2).

The 2008 *American College of Chest Physicians* (ACCP) guideline (3) recommends 2× daily, dose-adjusted treatment with low molecular weight heparins in patients with valve dysfunction in first place, equivalent to the option to restart patients on warfarin from the 13th week of gestation.

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In Reply:

In the 2006 study reported by Schaefer et al, the embryopathy rate was 0.7% in women taking phenprocoumon. A risk existed only where oral anticoagulants (OAC) were administered beyond the 8th week of gestation after the last menstruation. If the drugs were administered before the 8th week of gestation, no risk for embryopathy existed but the risk for miscarriage trebled compared with the risk in women not taking OAC (24% vs 9%).

The dose dependency of the embryopathy rate was studied in warfarin; equipotent dosages of other coumarins are not likely to have a different effect.

OAC provide the safest protection against valve thrombosis and thromboembolism, before and during pregnancy. 2.4% of women who were treated with OAC during their entire pregnancy developed thromboembolism, compared with 7% of those treated with low molecular weight heparins (LMWH). When LMWH were given only during the first trimester, the rate was 3.6% (2). According to Oran (2004), the rate of valve thrombosis when taking LMWH for the entire pregnancy was 9%. To ensure protection against valve thrombosis and thromboembolisms is the supreme aim in the care and information given to women with mechanical heart valves during pregnancy, as valve thrombosis is associated with high mortality for the mother as well as the fetus. Since the time interval from planning the pregnancy to conception is unpredictable, women should not be switched to a LMWH before conception. In the absence of urgently needed randomized studies, the recently published guideline from the European Society of Cardiology (Regitz-Zagrosek 2011) will be greatly helpful for doctors in deciding how to handle the complex problems of anticoagulation in pregnant women.

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Professor Regitz-Zagrosek holds patents in Roche Diagnostics, has received reimbursements for continuing medical educational events from Berlin Chemie, Bayer, and Willmar Schwabe, and has received research funding from Crataegus and Willmar Schwabe. Dr Gohlke-Bärwolf declares that no conflict of interest exists.