Inter-pregnancy interval to reduce the risk of recurrence the pregnancy with congenital heart disease in foetus.

Maciej Slodki1,2, Iwona Strzelecka3, Jedrzej Chrzanowski4, Giuseppe Rizzo5, Maria Respondek-Liberska2,3

The authors are the members of The International Prenatal Cardiology Collaboration Group.

• 1. Faculty of Health Sciences, Masovian State University in Plock, Poland.
• 2. Department of Prenatal Cardiology, Polish Mother's Memorial Hospital Research Institute, Lodz, Poland.
• 3. Department of Diagnoses and Prevention of Fetal Malformations, Medical University of Lodz, Lodz, Poland.
• 4. Department of Biostatistics and Translational Medicine, Medical University of Lodz, Lodz, Poland.
• 5. Ob Gyn, University Roma Tor Vergata, Roma, Italy.

OBJECTIVES

• Congenital heart defects (CHD) are one of the most commonly diagnosed congenital malformations in foetuses and newborns. The aim of the study was to determine whether inter-pregnancy interval (IPI), maternal age or number of pregnancies had any influence on the recurrence of congenital heart disease in subsequent pregnancies.

METHODS

We found in our database 144 cases with subsequent pregnancies after congenital heart disease in a previous pregnancy. Each case was selected according to the eligibility and exclusion criteria. Medical history as well as obstetrics history were recorded. Comparisons of groups with and without a recurrence of congenital heart disease were performed. We have calculated hazard ratios for recurrence of congenital heart defects for specified inter-pregnancy intervals. We have also performed analysis of the impact of confounding variables: maternal age and number of past pregnancies. Missing data was excluded from analysis. Smoking habits as well as socio-demographic characteristics were not evaluated in this study.

RESULTS

A higher risk of recurrence of congenital heart disease correlated with a shorter inter-pregnancy interval, with median of 11 months compared with 24 months for group of healthy foetuses in subsequent pregnancy. The results were statistically significant.

CONCLUSION

The optimal inter-pregnancy interval to reduce the risk of recurrence of congenital heart defects is 24 months. Shorter intervals are connected with a higher risk of recurrence of congenital heart defects in the next pregnancy and are independent on the age of the woman. Parity was proven to be an important confounder of the study. Multivariable analysis including parity and maternal age did not affect the confidence intervals of hazard ratios for inter-pregnancy intervals in the study.

Fig 1. Representation of IPI for groups I (non-recurrence of congenital heart defect) and II (recurrence of congenital heart defect).