

Shaw GM et al. Congenital cardiac anomalies relative to selected maternal exposures and conditions during early pregnancy. *Eur J Epidemiol* 8, 757-60, 1992

Type of study	Case-control
Where	California
When	1981-1983
Cases	<ul style="list-style-type: none"> - 172 infants met diagnostic criteria, 141 mothers interviewed (82.0%) - Ascertained by the California Birth Defects Monitoring Program (children with congenital cardiac disease diagnosed by echocardiogram, catheterization, surgery, autopsy up to one year of age). Excluded were cases with: chromosomal anomalies, isolated ventricular/atrial septal defects, isolated patent foramen ovale, patent ductus arteriosus among infants <38 weeks gestation, isolated pulmonic stenosis, arrhythmia, functional murmur. Approximately two-thirds of the diagnoses for the 141 cases were: ventricular/atrial septal defects, transposition of the great vessels, coarctation of the aorta, hypoplastic left heart, tetralogy of Fallot, pulmonary valve stenosis, pulmonary valve atresia
Case prevalence among the population	Not indicated
Controls	<ul style="list-style-type: none"> - 210 infants, 176 mothers interviewed (83.8%) - Randomly selected from vital statistics files of all livebirths without a cardiac anomaly in the county for the same time period
Exposure definition	Intake during early pregnancy
Ascertainment of drug exposure	Interview conducted with mother primarily by telephone an average 4.6 years after the birth
Prevalence of exposure among controls	<ul style="list-style-type: none"> - Antibiotics: 9.1% - Bendectin: 6.8% - Insulin: 0% - Anticonvulsant: 0% - Codeine: 4.0% - Aspirin: 9.7% - Tylenon: 30.1% - Oral contraceptives: 4.0%
Analysis	<ul style="list-style-type: none"> - Crude and adjusted OR and 95% CI were estimated (logistic regression to control for potential confounders: maternal race, age, education, smoking status, alcohol consumption) - Analyses performed with all cases as well as with a subset of cases having defects of the conotruncus
Strengths	<ul style="list-style-type: none"> - Population-based data - Good definition of the birth defects - Analyses for specific sub-groups of defects (defects of the conotruncus)
Weaknesses	<ul style="list-style-type: none"> - The study was not specifically designed to examine many of the exposures mentioned - Drug intake based on maternal report (risk of recall bias) - Control newborns with no birth defects (risk of recall bias) - Not indicated if the interviewers were aware of the case and control status - Wide range of the interview time after delivery; length of time between the child's delivery and the mother's interview - No information about dosages
Main results	For all cardiac anomalies as a group, no relation with maternal exposures during early pregnancy was suggested (crude OR: antibiotics 0.52, 95% CI 0.2-1.3; bendectin 0.93, 95% CI 0.4-2.3; insulin 5.1, 95%

CI 0.6-46.2; anticonvulsant 2.5, 95% CI 0.2-28.0; codeine 0.70, 95% CI 0.2-2.4; aspirin 0.65, 95% CI 0.3-1.5; tylenon 1.2, 95% CI 0.7-1.9; oral contraceptives 2.1, 95% CI 0.8-5.5 (adjusted OR were similar).
Cases with conotruncal defects showed a similar pattern