Evaluation of prenatal exposures in congenital heart defects in Rio Grande do Sul, Brazil

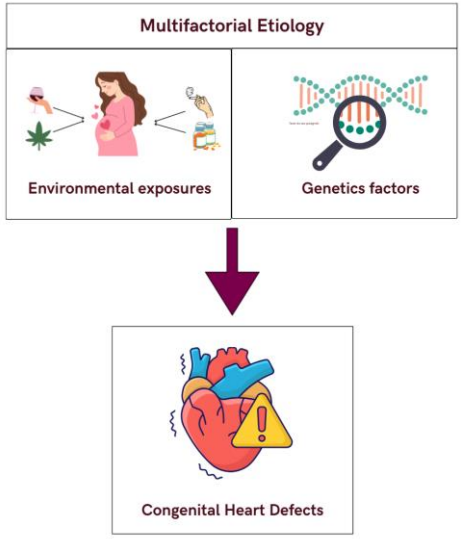
Fabyanne G. de Oliveira[1], João V. P. Foletto[1], George O. C Salecker[2], Vinicius B. Nolibos[2], Rosa M. M. Barbosa[2], Julia R. Pires[2], Carolina S. Arashiro[2], Angel L. de Souza[1], Simone M. Karam[3], Cláudia F. Lorea[1], Andrea T. Sutil[1], Maria T. V. Sanseverino[1],Thayne W. Kowalski[1], Taís S. da Rocha[2], Lavinia Schüler-Faccini[1,2]

[1]Teratogen Information System (SIAT), Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil; [2]Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil; [3]Universidade Federal de Rio Grande (FURG), Rio Grande, Brazil

INTRODUCTION

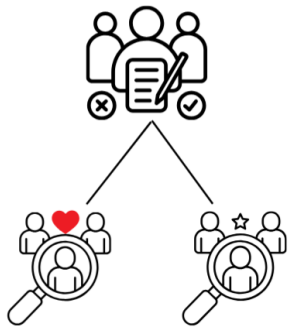
Exploring the environmental exposures is necessary to understand the multifactorial nature of congenital heart disease (CHD).

This study evaluated maternal exposure to teratogens in mothers of newborns with CHD and other congenital anomalies from a surveillance project in Southern Brazil.



METHODS

588 newborns included between November 2021 and February 2024.



Group 1
a. 245 newborns with isolated CHD (iCHD);
b. 136 newborns with CHD associated to other anomalies (aCHD).

Group 2
207 newborns with other congenital anomalies (neural tube defects, orofacial clefts, abdominal wall defects, and limb anomalies).

Univariate analysis using the chi-square test.

Results: The univariate analysis showed no significant differences ($p > 0.05$) between the two groups (CHD and other congenital anomalies) for the variables (alcohol, smoking, recreational drugs, and SSRI).

RESULTS

Table 1: Congenital heart defects diagnosed in live births, in Rio Grande do Sul.

CHD	N (%)
Atrial septal defect	174 (45.7)
Ventricular septal defect	110 (28.9)
Congenital pulmonary valve stenosis	24 (6.3)
Bicuspid aortic valve	13 (3.4)
Congenital mitral insufficiency	12 (3.1)

Table 2: Environmental exposures in mothers of newborns with CHD.

Environmental exposures	iCHD N (%)	aCHD N(%)	p value
Alcohol	23 (13.1)	8 (7.9)	0.237
Smoking	32 (17.2)	22 (21.0)	0.436
Recreational drugs	18 (10.1)	3 (3.0)	**0.033***
SSRI	25 (10.2)	13 (9.6)	0.568

CONCLUSIONS

CHD is one of the main causes of neonatal mortality in Brazil. The literature reports moderate associations with risk factors as maternal cocaine use and smoking during the first trimester and our study reinforces the need of preventive strategies to avoid exposures in women of reproductive age.

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