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Preview Notes

Temporal trend and characteristics of born alive babies with congenital malformations: an ecological study

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Abstract

Aim: to describe the characteristics of born alive babies with congenital malformation, to analyze the associated factors and the temporal trend in the municipality of Recife, Pernambuco, from 2001 to 2015. **Methods:** time series ecological study with data from the Live Birth Information System (SINASC). The rate of change for the years studied will be calculated. Multiple logistic regressions will analyze the independent variables significantly associated with congenital malformations. The strength of association between the dependent variable and the independent variables will be verified by the odds ratio. **Results:** it is expected to identify an increase in the proportion of born alive babies with congenital malformation in the analyzed series and the factors associated with the malformations. **Conclusions**: the results of this study may contribute to preventing and planning care to newborns with congenital malformations.

Descriptors: Newborn; Congenital Abnormalities; Health Information Systems; Vital Statistics.

INTRODUCTION

Congenital malformations constitute a serious public health problem, and their prevention and treatment are global priorities. They comprise any disorder in the form, structure or function of organs or cells of the embryo, detected before birth or recognized throughout early childhood[1].

Congenital malformations are estimated to reach approximately 2 to 5% of newborns worldwide annually, totaling 8 million cases per year. In Brazil, prevalence reaches approximately 2 to 5% of all live births. This proportion doubles at the end of the first year of life because of the anomalies that are diagnosed after birth[2].

In order to register congenital malformations, there is no specific registration system in Brazil, but they are accompanied by the Live Birth Information System (*Sistema de Informações sobre Nascidos Vivos* – SINASC). The presence of this event at birth began to be recorded in the Born Alive Report (BAR) from 1999, with the introduction of field 34 that said: "Has any congenital malformation and/or chromosomal anomaly been detected?" In the year 2011 a new version of the DN was implanted throughout the national territory, where the congenital malformation began to be recorded in variables 6 (congenital anomaly) and 41 (to describe all congenital anomalies)[3].

Congenital malformations constitute one of the main causes of fetal loss and contribute significantly to preterm birth, infant and adult morbidity, and considerable repercussions on mothers and their families. Knowing the profile of live births with congenital malformation and the factors associated with its occurrence is fundamental for the provision of quality and effective health care to the mother-child binomial.

Guiding question

What is the temporal trend and the characteristics of congenital malformations in live births, living in the municipality of Recife, Pernambuco, from 2001 to 2015?

AIMS

Describe the characteristics of born alive babies with congenital malformation and analyze the associated factors and the temporal trend in the municipality of Recife, Pernambuco, from 2001 to 2015.

METHODS

An ecological time series study will be conducted with the data obtained from the Live Birth Information System (SINASC) of live birth infants with congenital malformations, residents of Recife, Pernambuco, from 2001 to 2015. At BAR, the SINASC data collection tool, there is a section devoted to the description of congenital malformations identified at birth. This study will include all cases of live births with congenital malformations registered in the BAR.

The variables selected will be grouped according to the maternal characteristics (age, schooling, race/color and marital status), prenatal care and delivery (prenatal consultation number, gestation length, type of delivery and pregnancy) and of the newborn (sex, birth weight and Apgar score at the 1st and 5th minute).

The rate of change shall be calculated for all years of study, taking into account the following formula:

(Finalyear-initialyear) / Initialyear x 100

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A bivariate and multivariate statistical analysis using software R version 3.2.2 for Windows® will be used to evaluate the association between the variables through the use of multiple logistic regression, for which a significance level of 5% will be adopted. The strength of association between the dependent variable and the independent variables will be verified by the odds ratio.

The variable response (Y) will be the presence or absence of congenital malformation in live births, while the independent variables (X) will be all others previously mentioned.

The study project was approved by the Research Ethics Committee of the Joaquim Nabuco Foundation (CAAE: 67399617.6.0000.5619).

EXPECTED RESULTS

It is hoped that the results will contribute to the surveillance and planning of care and attention to pregnant women and newborns. The identification of significant predictive factors for congenital malformations may help in the early diagnosis and promotion of health actions.

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