

Descriptive analysis of a case-control study – identify to prevent

RENAC



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Background

Prenatal exposure to environmental risk factors such as industrial pollution are one of the known causes of congenital anomalies (CA). In 2015, a cluster of anorectal anomalies, a rare malformation, in Setúbal district (figure 1) raised concerns. The aim of the study was to assess the impact of prenatal exposure of the mothers on the occurrence of CA in the offspring.

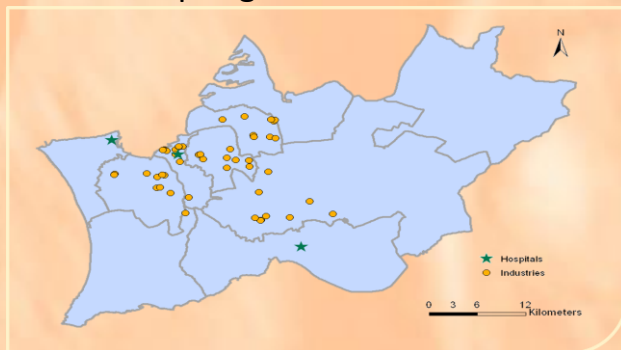


Figure 1 – Map of the Setúbal área with respective location of industries and hospitals

Methods

A case-control study (1:2) was implemented between 2016 to 2019. Newborns with CA (cases) and newborns without CA (controls) are identified and recruited. Parents were personally interviewed by a health professional using a standardized questionnaire.

A descriptive analyses was performed and cases and controls were described based on maternal residence during pregnancy.

Results

97 cases and **194 controls** were recruited during the study period

Baseline characteristics: There was a male predominance in the case group (60 vs. 34) and no difference in gestational age between case and control groups. The mean birth weight was similar (3115g in cases vs. 3221g in controls).

Potencial exposures: Smoking had more expression in the case group (21,2% vs. 16,3%). Moita (37,8%) is the municipality with higher frequency of cases.

Anomalies: Musculoskeletal anomalies were the most frequent (35.4%), followed by genital (22.2%) and other anomalies (11%). During the study period, five cases with anorectal anomalies were reported, 4 of them born at 2016 and in 3 the mothers residence place was Moita.

Conclusion

In this study, the high proportion of cases from Moita suggests a possible environmental exposure to a teratogenic agent. Also smoking during pregnancy could be a high risk to anorectal anomalies, as suggested in other studies. More investment in public health measures could protect population from harmful environments.