

# **MATERNAL HEALTH AND HEALTH BEHAVIOURS DURING PRECONCEPTION AND ANTENATAL PERIODS OF MOTHERS WITH INFANTS WITH STRUCTURAL BIRTH DEFECTS IN GALLE, SRI LANKA: A CASE-CONTROL STUDY**

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## **Introduction:**

Birth defects have become a serious public health issue in the world causing a higher morbidity and mortality among children. Identification of the possible risk factors, specially the modifiable risk factors for birth defects has become a top priority in order to prevent birth defects.

## **Objectives:**

This study was carried out to identify the associations between maternal health and health behaviours of mothers during preconception and antenatal periods and the non-syndromic or non-genetic structural birth defects (SBD) among their infants in Galle district, Sri Lanka.

## **Methods:**

A hospital and field clinics-based case-control study was carried out using 315 infants with non-genetic or non-syndromic SBD and 630 infants without any birth defect or any chronic disease condition. Data were collected through interviews with the mothers and through medical records of the mothers and the infants. Univariate and multivariate logistic regression

analysis were performed to detect the associates for SBD.  $p < 0.05$  was considered as the level of significance.

#### Results:

The univariate regression analysis showed that receipt of preconception care (OR=0.3, 95% CI=0.2-0.4), preconception folic-acid intake (OR=0.5, 95% CI=0.4-0.6), regular intake of micronutrients during antenatal period (OR=0.2, 95%CI= 0.1-0.4) and regular attendance to antenatal care (OR=0.2, 95%CI= 0.1-0.4) were protective against SBD among infants. Prepregnant low body mass index (OR=1.8, 95%CI=1.2-2.7), gestational diabetes mellitus (OR=2.8, 95%CI=1.6-4.9), pregnancy induced hypertension (OR=2.2, 95%CI=1.2-4.0), anaemia during pregnancy (OR=2.1, 95%CI=1.6-2.8), fever during pregnancy (OR=6.0, 95%CI=2.5-14.4) and usage of medication other than micronutrients long term during pregnancy (OR=2.5, 95%CI=1.5-5.1) were the risk factors for SBD. The multivariate regression analysis showed that receipt of preconception care (OR=0.4, 95%CI=0.2-0.7), regular intake of micronutrients during pregnancy (OR=0.1, 95%CI= 0.1-0.3) were protective against SBD while gestational diabetes mellitus (OR=2.8, 95%CI= 1.2-6.7) and fever during pregnancy (OR=4.1, 95%CI= 1.4-12.3) were risk factors for SBD.

#### Conclusions:

To reduce the occurrence of birth defects, Sri Lanka should enhance the preconception care services and nutrition interventions for eligible females during preconception and antenatal periods. Measures to reduce the prevalence of gestational diabetes mellitus should be strengthened and pregnant mothers with fever should be screened for possible infections and birth defects.