

## PARENTAL EXPOSURE TO SMOKE AND PREGNANCY OUTCOMES

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**Introduction:** Smoking during pregnancy is one of the risk factors associated with maternal and fetal adverse outcomes including pre-term birth, intrauterine growth restriction with correspondingly small-for-gestational-age (SGA) newborns, low birth weight for gestational age (LBWGA). The aim of this study is to evaluate the influence of maternal and paternal smoking on pregnancy outcomes.

**Materials and methods:** Data have been extracted from the database obtained collecting data for the Italian study called PHYTO.VIG.GEST (Phytovigilance on gestation), conducted for a period of three years (2014-2017). The study was funded by the Italian Medicines Agency and Assessorato alla Salute della Regione Sicilia, and involved the maternity units of Italian hospital centers in three regions (Emilia Romagna, Sicily and Tuscany). We interviewed 5361 women one or two days after delivery by a structured questionnaire. Parental data, pregnancy's and delivery's characteristics, and neonatal data were collected. Parental smoking exposure was estimated together with use of food supplements, synthetic drugs, alcohol, coffee, tea and chocolate consumption. Clinical data about pregnancy and delivery were collected from the clinical records of each pregnant.

**Results:** Smokers were 20.55% of the total sample of pregnant women, 32.85% of them kept to smoke during pregnancy. Maternal smoking was associated with delivery of with babies with low birth weight for gestational age (LBWGA) (OR:1.879; 95% CI:1.118-3.156; p-value:0.015) and 1-minute Apgar score < 7 (OR:1.758; 95% CI:0.997-3.1; p-value:0.048) in comparison to babies delivered by non smokers mothers. Fathers smokers in the total sample were 26.56%. When only fathers were smokers we observed with 1-minute Apgar score < 7 (OR:0.38; 95% CI: 0.26-0.57; p-value: <0.001), 5-minute Apgar score < 7 (OR:0.11; 95% CI:0.02-0.5; p-value: <0.001), induction of labor (OR: 1.06; 95% CI: 0.91-1.24; p-value: <0.001) and LBWGA (OR: 0.47; 95% CI: 0.25-0.89; p-value: 0). By using the stepwise multivariate logistic regression model we noticed that using LBWGA as dependent variable there was a statistical association between LBWGA and pre-term birth ( $\beta$ : 0.16, CI: 0.04-0.65, p-value: 0.011) and number of cigarettes (> 10) of the mother ( $\beta$ : 1.09, CI: 1.03-1.15, p-value: 0.002). By using the pre-term delivery as a dependent variable was noticed an association between pre-term birth and paternal smoke ( $\beta$ : 1.42, CI: 1.12-1.79, p-value: 0.004). Occurrence of urgent cesarean section was associated with mother's BMI ( $\beta$ : 1.02, CI: 1-1.04, p-value: 0.007); mother's alcohol consumption ( $\beta$ : 0.45, CI: 0.24-0.84, p-value: 0.012) and maternal smoke ( $\beta$ : 0.5, CI: 0.26-0.94, p-value: 0.032).

**Discussion and conclusion:** Parental smoking behaviour prior and/or during pregnancy negatively affects maternal and fetal adverse outcomes. Even though risk linked to smoking is well known, our results indicate that it is still important to sensitize people on its potential harm.