

Sleep-disordered breathing and obstructive sleep apnea in pregnancy: the burden of patient BMI and risk of poor outcome

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Objective. Sleep-disordered breathing (SDB) occurs more frequently in pregnant women than in the general female population. The first aim of the study was to evaluate the impact of BMI on the risk of SDBs/OSAS in pregnancy. The second outcome was to assess the feasibility of screening tools for SDBs in obese and overweight pregnant women *vs* controls. As a third aim, we investigated the incidence of perinatal adverse outcomes in an obese pregnant population at high risk for SDB and the evolution of risk across gestation.

Materials and Methods. Prospective observational study on 160 consecutive pregnant women attending prenatal care in our clinic. All the women were screened for SDBs in the three trimesters of pregnancy. Logistic regression analysis was used to identify the risk factors for SDB positivity. If the patient was positive to at least one test out of 3, in at least one trimester screening, she was classified as "case", otherwise as "control". The composite maternal and neonatal outcomes were compared between cases and controls with univariate analysis.

Results. 31 out of 44 patients screened positive in at least one survey (70.5%), while 4/31 resulted positive in all the questionnaires (12.9%). The incidence of positive screening test for SDB was significantly lower among the control group ($p < 0.01$). Obese patients with negative screening for SDB showed a significant difference in terms of FGR (11.4% *vs* 1.3%, $p <$

0.01), PTB (9.1% *vs* 3.6%, $p < 0.01$), preeclampsia (13.6% *vs* 2%, $p < 0.05$), PIH (15.8% *vs* 3.6%, $p < 0.01$) and GDM (45.5% *vs* 8%, $p < 0.05$) *versus* controls. Logistic regression demonstrated that the rate of FGR, PTB, PE, PIH, GDM and induction of labor (IOL) were all significantly higher in obese women with a positive screening test than in controls ($p < 0.05$). Induction of labor occurred more frequently in patients screened positive *vs* controls (11.4% *vs* 1.8%, $p < 0.05$).

Conclusions. The SDB questionnaires used in our study represent a simple, low-cost tool which is able to screen obese/overweight women at risk of sleep disorders of breathing in pregnancy. Our cohort was not further tested for SDBs, but the screening was useful to identify women worth testing, given the association of these conditions with pregnancy complications.

| PERCENTAGES | PS | NS | p |
|--------------------------|------|-----|-------|
| FGR | 16.1 | 1.3 | <0.05 |
| PRETERM LABOR | 13 | 3.6 | <0.05 |
| PREECLAMPSIA | 19.3 | 1.8 | <0.05 |
| GESTATIONAL HYPERTENSION | 22.6 | 3.8 | <0.01 |
| GESTATIONAL DIABETES | 64.5 | 8 | <0.01 |
| INDUCTION OF LABOR | 16.1 | 1.8 | <0.05 |