Maternal and foetal risk factors for predicting short-term perinatal outcome in IUGR foetuses born before 34 weeks

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DOI: 10.36129/jog.2024.S137

Objective. To identify maternal and foetal risk factors for predicting short-term perinatal outcome in IUGR foetuses born before 34 weeks.

Materials and Methods. This was a retrospective observational case-control monocentric study included singleton pregnancies with IUGR or spontaneous preterm labor (SPL), requiring delivery before 34 weeks at University of Naples Federico II between January 2021 -December 2023. Clinical population characteristics, pregnancy- related complications and perinatal outcomes were collected.

Results. A total of 160 singleton pregnancies were included: 103 with IUGR, 57 with SPL. Maternal age and gestational age were comparable between the two groups. The maternal BMI (29.02 ± 5.35 *vs* 27.08 ± 5.60; p = 0.001) was significantly higher in IUGR group. Nulliparity (63.11% *vs* 49.12%; p = 0.01), previous history of IUGR (52.94% *vs* 21.43%); p = 0.01), onset of pre-eclampsia (51.46 % *vs* 3.51%; p < 0.001), foetal doppler alterations (66.02% *vs* 5.26%; p < 0.001) and female sex (64.08% *vs* 29.82%; p < 0.001) were significantly higher in IUGR group. Neonatal weight (1175.5 ± 347 *vs* 1315.2 ± 397; p = 0.02), and umbilical cord pH (7.23 ± 0.105 *vs* 7.27 ± 0.087; p = 0.002) were significantly lower in case group, while umbilical cord lactate (3.6 ± 2.33 *vs* 2.72 ± 1.63; p = 0.01) was significantly higher in case group.

Conclusions. Maternal BMI, previous history of IUGR, pre-eclampsia, foetal doppler and foetal sex may be associated with worse short-term perinatal outcomes and can be used to develop a model for the prediction of adverse perinatal outcome in IUGR foetuses.