



Underlying cause of neonatal macrosomia

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Introduction



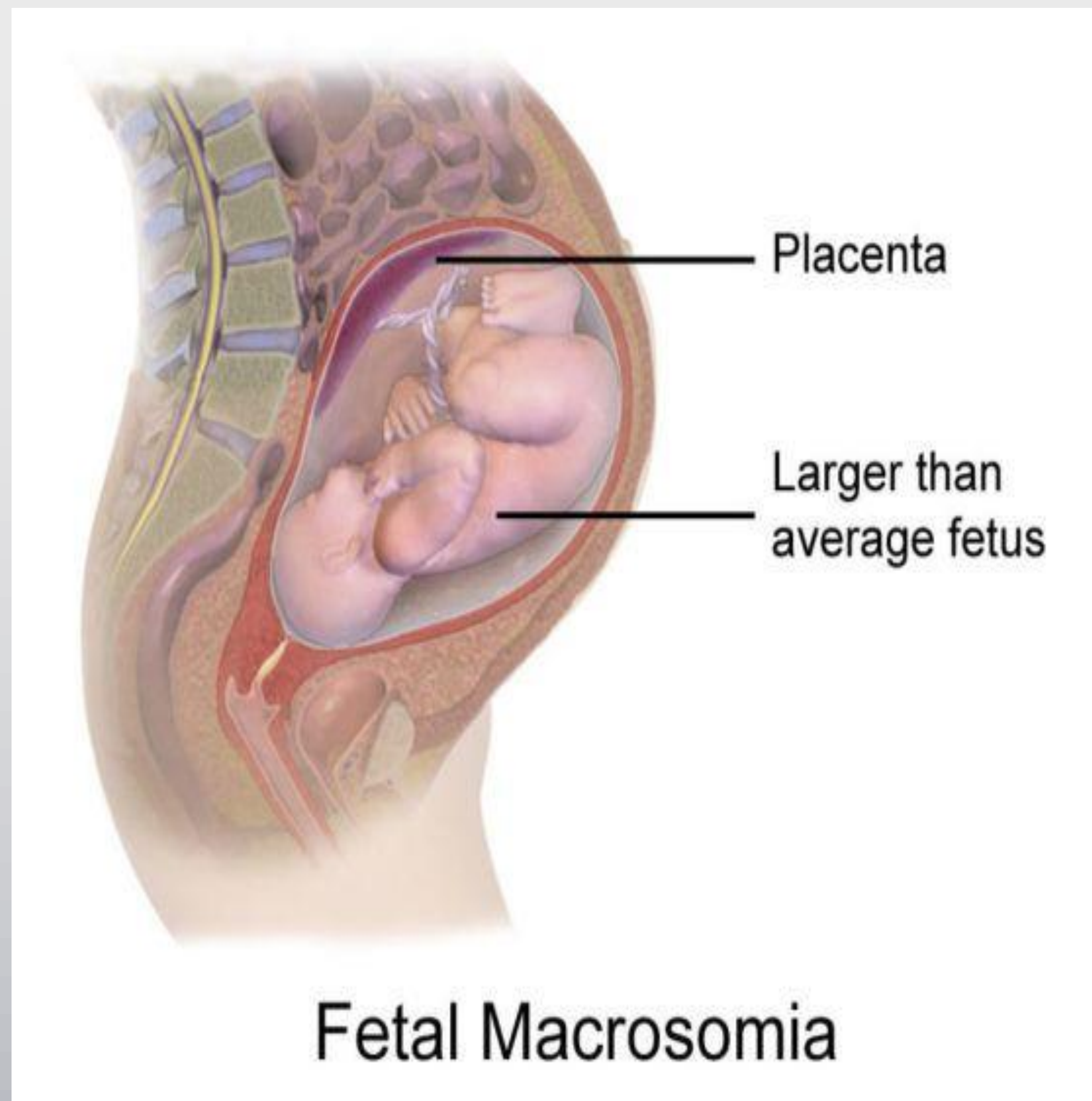
High blood sugar levels (BSL) in pregnant could be a reason for macrosomia. The aim of our study is to present some indicators in LGA babies related to maternal diabetes. Maternal diabetes is one of the most frequent medical conditions resulting in LGA newborns and may be induced by pregnancy or, if pre-existent, affects the pregnancy. Neonatal macrosomia interchangeably is used with large for gestational age newborns (LGA), defined as a birth weight greater than the 97th percentile as more accurately describing infants at greatest risk for perinatal morbidity/mortality. High blood sugar levels (BSL) in pregnant could be complicated by fetal hyperinsulinism and macrosomia is a result.

Methods

This is a cohort prospective study conducted in the first six months in 2020 at the University Clinic for Gynecology and Obstetrics in Skopje, North Macedonia.



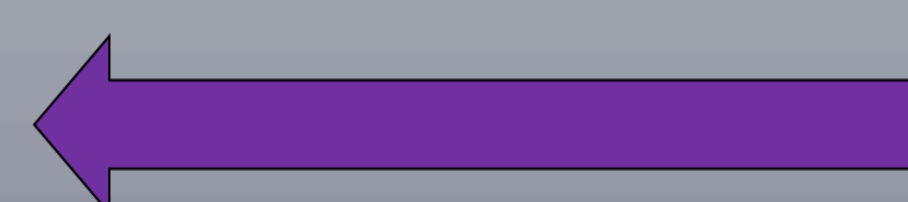
Results



The identification of the LGA newborns was according to WHO growth standards for both sexes. 1843 full-term newborns were examined, and 108 were LGA, divided into three groups: A-36 LGA babies (33,3%) whose mothers had no history of Diabetes; B-14 LGA babies (12,9,0%) of mothers with pre-gestational Diabetes; C-56 LGA babies (51,6%) of mothers with gestational diabetes. Initial glycemia was the investigated parameter. Glycaemia was taken according to the National Guidelines (30 minutes after the second feed) and the results showed significantly lower BSL in group C, mean $1,6 \pm 0,2$ mmol/L (OR 2.19, 95% CI, 1.25–3.82, $P=0.01$). Both groups of newborns (A and B) had no significant difference in the mean value of BSL. The ratio of male/female was significantly higher in group A (1,4) compared to the other two groups, suggesting that associated factors other than diabetes are responsible for the macrosomia. The results showed that LGA babies have a much higher risk if their mothers have gestational diabetes compared to pre-existing diabetes, and particularly with those whose mothers had no history or parameters of diabetes.

Conclusions

These findings suggest that pre-existing diabetes is a known risk factor before conception, the glycoregulation is established well, and if controlled, the adverse outcomes are rare. On the other hand, gestational diabetes occurs during pregnancy, and the impact on the fetus depends strongly on early identification and good management.



Bibliography

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