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The outcome of pregnancies with unexplained increased HCG levels at first trimester screening

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Objective

We conducted this retrospective study to investigate whether women with unexplained increased levels of maternal serum Human Chorionic Gonadotropin (HCG) at screening (combined test at 11+2-14+1 weeks gestation) are at an increased risk of pregnancy complications and adverse perinatal outcomes. Women with an unexplained raised HCG are at increased risk of hypertension, fetal growth restriction and preterm delivery (1). We performed this study in order to assess the risk of adverse pregnancy outcome in our population (Leeds UK) and provide patients with up to date and relevant information.

Methods

A retrospective case note analysis was performed in a large teaching hospital in the UK (Leeds) over a 1 year period. This unit has a delivery rate of 10, 000 births per year. Of this, approximately 60% take up the combined test screening. Inclusion criteria were a singleton gestation, HCG greater than 2. 5 multiples of the median (MoM) and delivered within the last 1 year 2015- 2016. Exclusion criteria were multiple pregnancy and delivered outside the area/ missing notes, fetal anomaly and those who selected not to take first trimester screening.

Results

In 2015 to 2016 11, 111 women booked for maternity care at Leeds Teaching Hospitals and there were 9552 births. During this time 6, 200 patients selected to undertake the combined test as screening. Of these 288 (4. 6%) had an unexplained increased HCG greater than 2. 5MoM (Corr). 284 (98. 6%) of these delivered live. There were two stillbirths and two second trimester miscarriages. Maternal age ranged from 16 to 44 years with an average age of 31. 6years. The population of Leeds (766, 000) is diverse with 17% from over 140 ethnic groups and 83% White British. In this study 72% of patients were of white British origin and 28% from other ethnic origin predominately White European (7. 2%). Level of HCG was not affected by Ethnicity. The mode of delivery in this group was not affected. Statistics for MOD were in line with National data but rate of LSCS and instrumental deliveries were slightly increased compared to local data. (LSCS rate 24. 6% in raised HCG group vs 20. 6% local data and 26. 2% National data) (3). FGR was defined as <2. 5kgs at term (>37 weeks). There was no clear association between unexplained increased HCG and fetal growth restriction.

Conclusion

Unexplained increased levels of HCG in this population have no effect on birth weight, incidence of PTB or the development of PE/PIH. Increased HCG does not affect MOD. Age and ethnicity have no association with an increased level of serum HCG however there may be an association with fetal sex as there were more female fetuses born in this group. This study shows that patients with an unexplained increased HCG as a single risk factor are not required to be managed as more high risk.