PRILIMINARY MORPHOMETRIC ANALYSIS OF PLACENTA IN PREGNANCY INDUCED DIABETES AND HYPERTENSION

Authors: Haasith Dara
Scientific research supervisor: Dr. K HEMA, Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India

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Introduction: The placenta is a unique characteristic of the higher mammals which is attached to the uterus and is connected to the foetus through the umbilical cord. Metabolic diseases like Pregnancy Induced Hypertension (PIH), chronic hypertension (HTN) and Gestational Diabetes Mellitus (GDM), effects the tissue components of placenta causing placental insufficiency. These diseases are common in high risk pregnant women like advanced maternal age (>35 years), obesity, family h/o HTN, DM, h/o PIH, DM, macrosomia, IUGR and unexplained foetal loss in previous pregnancies.

Materials and methods: A total of 100 freshly delivered placentae were collected from my teaching hospital and a nearby government general hospital. The placentae were collected soon after expulsion from normal deliveries, forceps deliveries and caesarean sections.

Results: Placentalmorphometricstudy:

Mean placental weight: The mean placental weight was more in GDM group (426.25 ± 48.02 grams) and the difference was highly significant($p < 0.01$) and it was less in PIH group (376.25 ±39) the dfferencence is significant $p<0.05$.

Mean placental cotyledons : The mean number of cotyledons was higher in GDM group (18.38± 2.27). The difference was significant ($p < 0.05$). And it is less in PIH group (14.78 ± 2.28) with significant difference of $p<0.05$.

Mean placental central thickness: The mean central thickness was significantly more ($p < 0.05$) in GDM group (2.12± 0.35centimeters) and significantly less ($p<0.05$) in PIH group (1.82 ± 0.22)

Mean placental diameter: The mean placental diameter was (16.33 ± 1.14) centimetres in GDM group and the difference between both groups was highly significant ($p < 0.01$). While it is less (14.46 ± 1.81) in PIH group and the difference was significantly low ($p<0.01$).

Comparison of placental shape: While in GDM group 35%of placentae were round shaped and 65% were oval shaped. The difference was not significant ($p > 0.05$). in PIH group 20% of the placentae were round and 80% of placentae were oval. The difference was not significant ($p<0.01$).

Comparison of umbilical cord insertion: In GDM group it was central in 25%, eccentric in 60% and marginal in 15% of placentae. The difference between two groups was again not significant ($p > 0.05$). In PIH group umbilical cord insertion was central in 17.5%, eccentric in 30% and marginal in 52.5%. the difference between the two was not significant.

Foetal outcome: In PIH group, the weight of the baby was fount to be less. On the other hand, the mean weight of the baby in GDM group was quite more than that of the control 3241 ± 206.

Conclusion: In mothers who have had no previous prenatal checkup, a thorough examination of placenta helps in the early diagnosis of the foetal complications, soon after parturition and thus helps in the treatment of the baby by the neonatologists. From this study we conclude that placentae of women with gestational diabetes mellitus and Hypertension show significant variation in gross morphology that can be associated with impaired function of placenta, leading to adverse perinatal outcome. The present study indicates that placenta also plays a key role in improving the neonatal care.