

Fetal Gender and Occurrence of Maternal Eclampsia: is there an Association?

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The occurrence of eclampsia may be related to the fetal gender. A prospective study was planned to study the distribution of fetal gender among the cases of eclampsia from January 1999 to December 1999. A total of 140 cases of eclampsia were recorded during this period. Four cases of multiple gestations were excluded from the study. Of the 122 case notes available for analysis, there was birth of 58 boys and 60 girls. There is no statistical difference between male and female babies born to the eclamptic mothers.

Key words: Pre-eclampsia, Eclampsia, and fetal gender

Hypertensive disorders of pregnancy complicate approximately 10% of all pregnancies and eclampsia occurs in about 1.3% of these cases¹. Studies have shown that fetal gender plays an important role in the development of this disease; however, their results are contradictory^{2,3}. The aim of our study was to investigate whether any relationship exist between occurrence of eclampsia and fetal gender.

Materials and Methods

The study was performed at Lady Willingdon Hospital, Lahore from January 1999 to December 1999. The hospital is a tertiary referral teaching hospital and has an annual delivery rate around 9,000. Only those cases were included in the study where the patient had seizures during pregnancy after 20 weeks of gestation or within 72 hours of delivery. The patients already known as epileptic or other pre-existing diseases associated with fits were excluded from the study. The patients with multiple pregnancies were also not included in the study. A daily record of all the cases of eclampsia admitted to the hospital was kept and their fetal outcome noted.

Results

During this twelve-month period of study 9,470 maternities took place at the hospital. A total of 140 cases were complicated by eclampsia. There were 89 primigravidae and 51 multiparous patients. The case notes of 18 patients were not available for review. There were three sets of twins and one triplet pregnancy, these case were excluded from the study. There was birth of 60 females and 58 male babies. The distribution of these babies as parity of mothers is shown in table 1

Table 1: Distribution of gender of babies born and parity of mothers

	Male	Female
Primigravidae (89)	36	33
Multiparous (51)	22	27

Discussion

Our study has shown that there is no significant association of fetal gender associated with the occurrence of eclampsia in mother. Pre-eclampsia and eclampsia are enigmatic

conditions and their pathophysiology is poorly understood. Genetic studies have shown that daughters of women with a history of eclampsia are more susceptible to pre-eclampsia and eclampsia than women in general population⁴. Studies with a high male: female ratio suggests that toxemia of pregnancy has an immunological basis². Histocompatibility of fetus and mother due to an antigen dependent on Y chromosome may play a role in the pathogenesis of pre-eclampsia and eclampsia. Studies on hormonal factors have shown that Human Chorionic Gonadotrophin (hCG) levels are higher in pregnant women carrying female fetuses than with male fetuses. Higher hCG levels are also observed in women with pre-eclampsia. Hsu et al⁵ observed a predominance of female fetuses in pre-term pre-eclamptic pregnancies when compared with pre-term normotensive pregnancies. Also ukhsheed et al³ has noticed increased incidence of pre-eclampsia and pregnancy induced hypertension in primiparous mothers with female fetuses.

Our study fails to establish any meaningful relationship between fetal gender and occurrence of maternal eclampsia. Clearly, larger series are required to study the relationship between gender of fetus and occurrence of pre-eclampsia and eclampsia. If any such association exists, an ultrasound scan performed at 18 weeks for fetal anatomy could also be utilized for detection of fetal sex. In case a consistent relationship of a type of fetal gender is confirmed on the basis of statistically significant studies, a higher vigilance in the form of frequent antenatal visits and prescription of low dose aspirin could be instituted in those specific cases. This attempt may help to reduce a higher perinatal and maternal loss associated with pre-eclampsia and eclampsia.

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