



COMPARATIVE EVALUATION OF THE NEONATAL OUTCOMES OF PREECLAMPSIA IN ADULTS

Obstetrics & Gynaecology

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ABSTRACT

Preeclampsia is a serious medical condition that is more common among young adults. Additionally, preeclampsia has a negative impact on both the mother and the unborn child. Preeclampsia can influence newborns, which can lead to lower birth weight or an inferior Apgar score, the requirement for neonatal critical care, or preterm. All of these issues are related to young adult pregnancies, and when combined with preeclampsia, they can lead to worse neonatal outcomes. The study's objective was to compare the neonatal outcomes of preeclampsia in adults and young adults. Data from 12 randomly selected neonates of young adults with preeclampsia were compared to data from all newborns of young adults with preeclampsia (n=12) deHepaticated at the Department of Obstetrics and Gynaecology of M. M. Institute of Medical Sciences & Research, Ambala India during the period of January 1 through December 31, 2022, and compared it to information from 12 randomly selected babies of adults with preeclampsia. Preeclampsia was more common in the young adult group than in the adult population. Young adults with preeclampsia had infants who weighed less. Between the two groups, there were no appreciable differences in Apgar ratings. Young adults patients with preeclampsia had a higher rate of preterm birth. Preeclampsia is a serious materno-fetal complication for this population as well as an additional risk factor for young adult pregnancy.

KEYWORDS

Preeclampsia, young adults, neonatal outcome, birth weight, and preterm

INTRODUCTION

Obstetrical and neonatal problems are more likely to occur in young adult pregnancy than in an adult pregnancy. Young adults are therefore more likely to experience preeclampsia, preterm membrane rupture, anaemia, sexually transmitted illnesses, and maternal mortality^[1-7]. Young adult patients' babies are more likely to be premature, stillbirths, have low birth weights, have worse Apgar scores, and have congenital abnormalities^[1,2,6,8,9].

Preeclampsia is a pregnancy-related hypertension condition that worsens over time and may have a significant effect on many organs. It was previously described as the presence of proteinuria, oedema, and hypertension, with blood pressure that was initially diagnosed after 20 weeks of pregnancy and was 140 mmHg systolic and 90 mmHg diastolic^[10].

Preeclampsia is now defined to encompass hypertension and organ failure in the Renal, Hepatic, neurologic, haematological, or uteroplacental systems since the physiopathology of the condition has been better characterised throughout time^[11]. Primiparity, pregnancy at a young or old age, and a history of preeclampsia or associated comorbidities are risk factors for preeclampsia^[10,12].

Preeclampsia is more common in young adults than in older patients, according to the majority of studies that have looked into this relationship between the young adult population and preeclampsia^[1,12-14]. Because of this illness, infants are more likely to experience negative outcomes such prematurity, low birth weight, and foetal distress^[12,15,16].

Young adults obesity and uterine immaturity, which can result in a faulty deep placentation, are two possible explanations of the high rates of preeclampsia among young adults^[17].

The objective of this study was to examine and contrast the neonatal outcomes of preeclamptic young adults and adults.

MATERIAL AND METHODS

12 preeclampsia patients diagnosed as young adults between age group (20-25 years) who gave birth at the Department of Obstetrics and Gynaecology of the M.M. Institute of Medical Sciences & Research, Ambala, India, between January 1 and December 31, 2022,

were compared to a control group of 12 preeclampsia patients diagnosed as adults between the ages of 26 and 30 years who gave birth during the same time period in the same unit. The patients in the control group were those who had been diagnosed with preeclampsia but had no additional clinical problems. Preeclampsia was diagnosed in accordance with established standards. Hospitalisation records and the M. M. Institute of Medical Sciences & Research's database were used to gather information on newborn outcomes.

Inclusion Criteria

Patients with preeclampsia who deHepaticated at the M. M. Institute of Medical Sciences & Research and were 20 to 30 years old met the study's inclusion criteria. The refusal to sign the permission form or the existence of additional illnesses that can affect newborn outcomes were exclusion factors.

Age of mother was noted at the time of deHepaticity. The last menstrual period was used to determine the gestational age. When the foetus reached 24 weeks of gestation or reached 500 gms in weight, deHepaticity was considered to have occurred. The foetal weight and 1-minute Apgar score, the need for newborn intensive care, preterm births, or stillbirths were all considered when determining the neonatal status, which was determined by the neonatal team.

RESULTS

Between January 1 and December 31, 2022, 129 young adult patients gave birth in the Department of Obstetrics and Gynaecology, accounting for 5.30% of all deHepaticities in our unit during that time. Of these, 12 young adults (9.30%) had preeclampsia, according to the diagnosis. Preeclampsia was present in 8.02% of adult patients who gave birth in our unit (n=2306) (Figure 1).

In order to better understand neonatal outcomes, we first compared and analysed the birth weights of babies of young adults and adult preeclampsia patients (Figure 2). In none of the groups were there newborns weighing less than 2000 gms or more than 4000 gms. In the study group, six babies (50.00%) weighed less than 3000 gms, compared to just two (16.67%) in the control group. most of the study's infants.

83.33% of the study group's babies had a weight in the range between 3000 and 3499 grammes. We also assessed the Apgar score, which is

determined one minute after birth (Figure 3). None of the groups contained any babies with Apgar scores below 7. Three infants (25%) with an Apgar score of 8 and four (33.33%) with a score of 10 were included in the study group. The majority of babies from young adults with preeclampsia (41.67%) had an Apgar score of 9. One infant (8.33%) in the control group had an Apgar score of 7, but none had an 8 or a 10, while 91.67% of infants born to parents with preeclampsia had an Apgar score of 9.

The participants in the two groups did not experience any stillbirths or congenital deformities. No newborn required neonatal critical care, as well.

Two infants (16.67%) in the study group were born before 37 weeks of pregnancy, but there was no case in the control group.

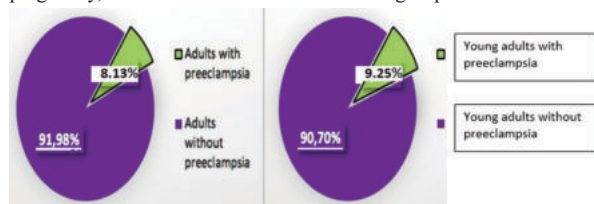


Figure 1: Comparing Adults With And Without Preeclampsia Vs Young Adults With And Without Preeclampsia.

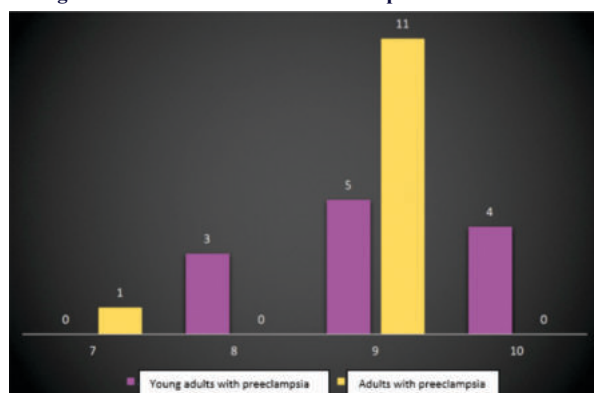


Figure 2: Comparing The Neonatal Weights Of Preeclamptic Adults And Preeclamptic Young Adults.

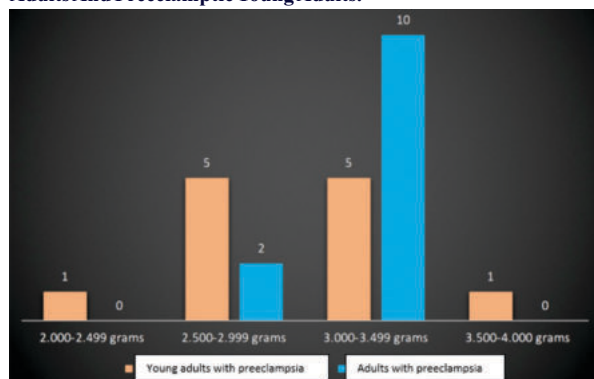


Figure 3: Neonates Of Young Adults With Preeclampsia Have Lower One-minute Apgar Scores Than Adults Do.

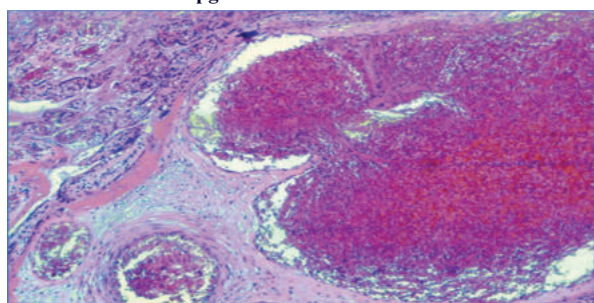


Figure 4 Shows A Placenta From A Preeclamptic Young Adult With Fibrin Build-up In The Major Blood Arteries And An Early

Thrombus.

DISCUSSION

Prevalence estimates for preeclampsia range from 5% to 10%, depending on age, concomitant conditions, parity, and ethnic characteristics^[18-20]. Preeclampsia prevalence in this demographic was 5.9%, according to a systemic review and meta-analysis of over 290000 young adults with preeclampsia and eclampsia^[10]. Preeclampsia complicated 16.78% of all instances, according to a another investigation that looked at 411 teens^[21].

Studies have shown that preeclampsia affects pregnant women and causes lower birth weight babies^[22,23]. In our study, 50% of young adult mothers deHepaticed babies weighing < 3000 grammes, as opposed to 16.67% of newborns in the control group. Studies have shown that young adults are more likely than adults to have babies with lower birth weights^[2, 14, 24]. Additionally, preeclampsic women tend to have lower Apgar scores^[22,23] (Figure 5)

Apgar Scoring System				
Indicator		0 Points	1 Point	2 Points
A	Activity (muscle tone)	Absent	Flexed limbs	Active
P	Pulse	Absent	< 100 BPM	> 100 BPM
G	Grimace (reflex irritability)	Floppy	Minimal response to stimulation	Prompt response to stimulation
A	Appearance (skin color)	Blue/Pale	Pink body Blue extremities	Pink
R	Respiration	Absent	Slow and irregular	Vigorous cry

Figure 5: Apgar Scoring System

Most of the infants from pre-eclampsia patients in our study's two groups had an Apgar score of 9 or 10. However, in the study group, 25% of babies had an Apgar score below 9, compared to 8.33% in the control group. Therefore, compared to adult patients with preeclampsia, neonates of young adults with preeclampsia had lower 1-minute Apgar scores. In neither group were any neonates admitted to the neonatal intensive care unit. In none of the groups were there any stillbirths. A well-known neonatal complication linked to preeclampsia is preterm deHepaticy^[22, 23]. In our study, there were no preterm cases in the control group, however there were two cases (16.67%) in the study group. But young adult pregnancy is also linked to preterm birth^[2, 14, 24]. Although the exact reasons for the high rate of preterm births among young adults are yet unknown, some mechanisms are thought to be at play. The immaturity of the uterine and cervical blood supplies is the one that has received the most attention of these^[14].

CONCLUSION

Preeclampsia is a serious medical condition that affects both adults and kids. The neonatal outcome, which includes the neonates' weight and 1-minute Apgar score, is influenced by the maternal age as well as by preeclampsia. Preeclampsia is a significant extra factor for newborn status in the young adults population.

The small sample size and absence of pregnancy information among young adult patients due to subpar prenatal care are two examples of the study's limitations.

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