

A Study of Incidence of Pre-Eclampsia in Relation to Maternal Age

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Abstract

Background: - Pre-eclampsia is a serious complication of pregnancy and contributes significantly maternal as well as perinatal morbidity and mortality. So this study is done to find if there exists any relationship between maternal age and pre-eclampsia.

Aim:- To study what age group is more prone to development of pre-eclampsia in normal pregnancies.

Methodology:- 400 pre-eclamptic women in age group 18-42 years were included in the study. Cases are divided according to different age group.

Result:- Higher incidence of pre-eclampsia was observed in the age group 18-26 years followed by 35-42 years.

Discussion:- Age is found to be related to pre-eclampsia.

Conclusion:- From this study, this can be concluded that age less than 25 years and age greater than 35 years are more prone to development of pre-eclampsia.

Key Words :- Maternal age, pre-eclampsia, proteinuria, blood pressure.

Introduction

The glory of attaining motherhood is often associated with shadows of life threatening dangers to the mother and the unborn child, even though pregnancy and childbirth is purely a physiological process.

Pre-eclampsia is one of the complication of pregnancy and contributes significantly maternal as well as perinatal morbidity and mortality^(1,2). This disorder is characterised by involvement of cardiovascular, coagulation, renal and hepatic system^(3,4). This is a life threatening complication of pregnancy and is characterised by high blood pressure and proteinuria⁽⁵⁾.

Extensive studies have been made to detect the aetiology and pathogenesis of the condition. But despite decade of research, the aetiology of PIH has remained elusive and no definite and universally accepted conclusion has been reached⁽⁶⁾. During normal pregnancy, renal blood flow and glomerular filtration

increases appreciably. With the development of pre-eclampsia renal perfusion and glomerular filtration are reduced, resulting in impairment of renal function. The main characteristic feature of pre-eclampsia i.e. edema, proteinuria and hypertension are due to renal involvement. There occurs renal vasospasm which eventually produce endothelial damage, proteinuria and hypertension^(7,8,9).

So considering the mater related to our country an attempt has been made to study the incidence of pre-eclampsia in relation to age of the mother. The purpose of the study is to show the relationship if exists between maternal age and chances of risk of pre-eclampsia to help early detection of pre-eclampsia.

Aim

To study what age group is more prone for the development of pre-eclampsia in normal pregnancies.

Methodology

The present study was a cross sectional study undertaken from 1st August 2017 to 1st August 2019. Cases were collected from the department of Obstetric and Gynaecology, Silchar Medical College and Hospital, Silchar.

400 pre-eclamptic women in the age group 18 – 42 years were included in the study. Cases are divided according to different age group 18-26 years, 27-34 years and 35-42 years.

Criteria for selection of cases – 400 pre-eclamptic women in the age group 18 – 42 years were taken as cases. The pre-eclamptic women were diagnosed in

accordance with American College of Obstetric and Gynaecology guidelines.

MILD PRE-ECLAMPSIA – SBP>140mmHg and DBP>90mmHg on two separate readings four hours apart and proteinuria (1+/2+) on dipstick measurement.

SEVERE PRE-ECLAMPSIA – SBP>160mmHg and DBP>110mmHg on two separate readings four hours apart and proteinuria (≥3+) on dipstick measurement.

Exclusion Criteria – Pre-eclamptic patients with history of having hypertension, cardiovascular disease, renal disease, hepatic disease, endocrine or metabolic disorder before the onset of the present pregnancy are excluded from taking as cases.

Result –

Table 1 showing age wise distribution of pregnant women with pre-eclampsia.

Age group in years	Number of pregnant women with pre-eclampsia	% of pregnant women with pre-eclampsia
18-26	188	47
27-34	40	10
35-42	172	43
Total	400	100

The above table showed incidence of pre-eclampsia 47% in age group 18-26 years; 12% in age group 27-34 years; 43% in age group 35-42 years.

Table 2 showing comparison of percentage of cases of pre-eclampsia among age groups 18-26 yrs and 27-34 yrs.

parameter	Age (yrs) 18-26	Age (yrs) 27-34	significance
% of cases of preeclampsia	47%	10%	<0.05

Student's t-test had been applied to assess if there was any significance difference in percentage pre-eclampsia cases in age group 18-26 yrs and 27-34 yrs. It had been observed that significant difference in percentage pre-eclampsia cases in age group 18-26 yrs and 27-34 yrs.

Table 3 showing comparison of percentage of cases of pre-eclampsia among age groups 35-42 yrs and 27-34 yrs.

parameter	Age (yrs) 35-42	Age (yrs) 27-34	significance
% of cases of preeclampsia	43%	10%	<0.05

Student's t-test had been applied to assess if there was any significance difference in percentage pre-eclampsia cases in age group 35-42 yrs and 27-34 yrs. It had been observed that significant difference in percentage pre-eclampsia cases in age group 35-42 yrs and 27-34 yrs.

Table 4 showing comparison of percentage of cases of pre-eclampsia among age groups 12-26 yrs and 35-42 yrs.

parameter	Age (yrs) 18-26	Age (yrs) 35-42	significance
% of cases of preeclampsia	47%	43%	>0.05

Student's t-test had been applied to assess if there was any significance difference in percentage pre-eclampsia cases in age group 18-26 yrs and 35-42 yrs. It had been observed that insignificant difference in percentage pre-eclampsia cases in age group 18-26 yrs and 35-42 yrs.

Discussion

In the present study age is found related to pre-eclampsia. In this study highest incidence of pre-eclampsia is observed in the age group 18-26 years (47%) followed by 35-42 years (43%).

Samuel et al found the highest incidence in the age group 16-27 years⁽¹⁰⁾. Entman et. al found the highest incidence in the age group 16-25 years⁽¹¹⁾. Sheraj et al found pre-eclampsia more frequent with age group less than 21 years and in older age group greater than 35 years⁽¹²⁾. Zibaenazhad et al reported that young primigravida less than 20 years and all patients above 30 years have an increase chance of hypertension⁽¹³⁾. Kumar et al documented that pregnant women less than 20 years were 3.87 times at risk of developing pre-eclampsia compared to age more than 20 years⁽¹⁴⁾. Duckill et al also observed teenage pregnancy and pregnancy above 30 years to be one of the risk factor of pre-eclampsia⁽¹⁵⁾. Sajith et al also reported that highest incidence of pre-

eclampsia in the age group 18-22 years (41.3%)⁽¹⁶⁾. Walker reported that factors influencing the development of pre-eclampsia before 20 years of age may be due to initial trophoblastic invasion and how mother reacts to it. He added that failure of normal invasion trophoblastic cells leads to mal adaptation of spiral arterioles which are related to causation of pre-eclampsia⁽¹⁷⁾. Duckitt et al reported that increases incidence of pre-eclampsia in women greater than 30 years seems to be due to increases villous reaction⁽¹⁵⁾.

Conclusion

From this study, this can be concluded that maternal age less than 25 years and greater than 35 years are more prone for development of pre-eclampsia.

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Conflict of Interest – Nil

Ethical Clearance is not required and funding within the manuscript.

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