

EVALUATION OF THE NEONATAL OUTCOMES AMONG BABIES OF ELDERLY AND YOUNG MOTHERS

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ABSTRACT

Background: This study is planned to study the relationship between advanced maternal age and neonatal outcomes. **Materials and method:** The present study was an observational cross-sectional study. Total sample size calculated was 400, out of them cases and controls were selected in the ratio of 1:1 after undertaking written informed consent. Cases include babies born to mothers more than 35 years and controls includes babies were born to mothers between the age of 19 to 35 years. **Results** In the present study the number of premature babies in the case group were 44 (22%), and in controls 20 (10%) (P value=0.001). Out of 200 cases, 20 babies (10%) had APGAR <7 at 1 minute and 6 (3%) babies had APGAR <7 at 5 minutes. 56 cases (28%) had low birth weight and only 12 babies (6%) had low birth weight (P value < 0.001). 22 cases (11%) were SGA and among controls only 02 (1%) babies were born SGA (P value < 0.001). 68 babies (34%) had SNCU (Special Neonatal Care Unit) admission and 36 babies (18 %) had SNCU admission in the control group (P value < 0.001). **Conclusion:** incidence of Prematurity, low birth weight, Small for gestational age and SNCU admissions was found more in babies born to elderly pregnant women than babies born to pregnant women less than 35 years of age.

Keywords: outcome Advanced maternal age, Low birth weight, APGAR.

INTRODUCTION:

Pregnant women who are at the age of 35 years and more are designated as elderly pregnant women or mothers (1). In recent era majority of women are aiming at achieving higher education and attaining the career objectives (2). This results in delayed marriage and leads to childbirth at the advanced age or in later decades of life (3). There are many consequences related to higher maternal age at child birth has been

studied such as, preterm delivery, increased perinatal morbidity, low birth weight, increased perinatal mortality and intra uterine fetal death (4). Advanced-maternal age has already been considered as a risk factor for pregnancy related complications. The relationship between advanced maternal age and a higher risk of chromosomal abnormalities and intra uterine

fetal death or spontaneous abortion is well-known and studied (5).

Increasing maternal age at child birth has been studied and observed to be linked with pre-eclampsia, gestational diabetes, placenta previa, eclampsia, preterm delivery, increased perinatal morbidity, placental abruption, caesarean section (CS), low birth weight, intrauterine fetal death and perinatal mortality (6). Majority of these researches were conducted in developed countries and study participation was western population (7). Many studies have been reported that increasing maternal age is correlated with a statistically significantly higher risk for perinatal mortality (8). Although, other researchers have failed to report higher perinatal death (9).

However, there are not many researches from India, where there is considerably low socioeconomic status, higher prevalence large family size and cultural practice of early marriage (10). The present study aimed to study and report the neonatal outcome of the child born to mothers less than 35 years of age (19 years to 35 years) and elderly mothers (age more than 35 years) and to compare the results.

MATERIALS & METHODS

The present study was an observational cross-sectional study conducted at S.K. district Hospital, Sikar, Rajasthan, during the period of May 2016 to June 2017. Ethical clearance from hospital ethical committee was taken. Total sample size calculated was 400, out of them cases and controls were selected in the ratio of 1:1 after undertaking written informed consent. Cases includes babies born to mothers more than 35 years and controls includes babies were born to mothers between the age of 19 to 35 years. All the Medical Records of the mother/neonate were collected and studied.

Young mothers who delivered immediately after the elderly mothers or by the same procedure were considered as controls. Babies born to mothers who had chronic illnesses of heart, lungs, and kidney were excluded from the study. Period of gestation, APGAR score, low birth weight and SNCU (Special Newborn Care Unit) admissions were taken as outcomes of the study. All the findings were entered into an Excel spreadsheet on Microsoft Excel 2010. The statistical analysis was done using the Statistical software package SPSS v22 and Epi Info v7. A p-value <0.05 with 95% confidence intervals were considered statistically significant.

RESULTS

In the present study the number of premature babies in the case group were 44 (22%), and in controls 20 (10%). The chi-square value was 10.71, P value was 0.001 (95% CI), and which was statistically highly significant. This implies that elderly mothers have the greater risk of delivering premature babies

Table 1: Preterm and term babies born to mothers aged >35 years and <35 years.

Mothers	Term (%)	Preterm (%)	Total
> 35 years	156 (78)	44 (22)	200
< 35 years	180 (90)	20 (10)	200
Total	336 (84)	64 (16)	400

Out of 200 cases, 20 babies (10%) had APGAR <7 at 1 minute and 6 (3%) babies had APGAR <7 at 5 minutes. Out of 200 controls, 10 babies (5%) had APGAR <7 at 1 minute and only 4 babies (2%) had APGAR <7 at 5 minutes, which was statistically non-significant.

Out of 200 cases, 144 cases (72%) had normal birth weight and 56 cases (28%) had low birth weight. Among 200 controls, 188 babies (94%)

had normal weight at birth and only 12 babies (6%) had low birth weight. The chi square value was 34.30 and the P-value was < 0.001 (95% CI). This finding was statistically highly significant. This implies that elderly mothers have greater risk of delivering LBW babies (Table 2).

Table 2: LBW in babies born to mothers aged >35 years and <35 years.

Mothers	Normal (%)	LBW (%)	Total
>35years	144 (72)	56 (28)	200
<35years	188 (94)	12 (6)	200
Total	332 (83)	68 (17)	400

Out of 200 cases, 22 cases (11%) were SGA and among controls, only 02(1%) babies were born SGA. The chi-square value was 17.73, the P-value <0.001 (95% CI) which was statistically highly significant. This finding implies that elderly mothers have greater risk of delivering SGA babies (Table 3). 2 cases out of 200 born to pregnant women with > 35 years of age were stillborn and there was no stillbirth in control group (< 35 years). Fisher exact value was 0.32.

Table 3: AGA and SGA in babies born to mothers aged >35 years and <35 years.

Mothers	AGA (%)	SGA (%)	Total
>35 years	178 (89)	22 (11)	200
<35 years	198 (99)	02 (01)	200
Total	376 (94)	24 (06)	400

Among case group, 68 babies (34%) had SNCU admission and 36 babies (18 %) had SNCU admission in the control group. The chi-square

test was 13.30; the P value was < 0.001 (95% CI) which was statistically highly significant (Table 4). Among 68 cases who had SNCU admission, 24 cases had significant events in SNCU, which included jaundice, convulsions, sepsis, RDS and death. Out of 36 controls shifted to SNCU, only 8 had significant events. The chi square test was 3.42, the P value was 0.08 (95% CI).

Table 4: SNCU admissions in babies born to mothers aged >35 years and <35 years.

Mothers	Mother side (%)	SNCU (%)	Total
>35 years	132 (66)	68 (34)	200
<35 years	164 (82)	36 (18)	200
Total	296 (74)	104 (26)	400

DISCUSSION

In the present study, 400 babies were included. Out of which 200 babies born to pregnant women of more than 35 years of age and were taken as cases similarly 200 babies born to pregnant women of 19 to 35 years of age and were taken as controls. Out of 200 pregnant women above 35 years, 44 (22%) delivered prematurely in comparison with 20 (10%) pregnant women who delivered prematurely in the control group (mothers aged between 19 to 35 years). The p value was <0.001, which means results were statistically highly significant. These findings suggest that the prevalence of premature babies in elderly pregnant women was greater than the control group. A study conducted by Minoo R et al. (11) and a similar study conducted by Berkowitz GS et al. (12) found nearly same results, that prevalence of preterm deliveries was greater in pregnant women aged 35 years or more.

In the present study, we found that 56 cases (28%) were low birth weight in comparison with

12 (6%) babies in the control group. The Chi-square value was 34.30 and p-value was <0.001, which means highly statistically significant result. This finding implies that elderly pregnant women had a greater chance of delivering low birth weight new-born in comparison to younger pregnant women. Studies conducted by Mino R et al. (11) and a similar study conducted by Berkowitz GS et al. (12) observed that the prevalence of LBW babies was more in elderly pregnant women than the younger mothers control group.

The APGAR scores were lower among babies born to elderly pregnant women at birth (<7 at 1 minute and 5 minutes) in comparison to babies born to pregnant women aged less than 35 years. P value of APGAR <7 at 1 minute was 0.07 which was a non-significant result and fisher exact value of APGAR <7 at 5 minutes was 0.835. These findings were statistically non-significant. A study conducted by Ates S et al reported that 25% of babies in the case group had low APGAR score at 5 minutes in comparison to none in the control group. Reported P value of APGAR <7 at 5 minutes was 0.032, which means statistically significant result (13).

In the present study we found that 22 (11%) babies were SGA in the case group and only 02 (1%) babies were born SGA in the control group. The p-value was <0.001, which means results were statistically highly significant. This finding implies that elderly pregnant women had times greater chance of delivering SGA babies.

In the present study 68 (34%) babies of the case group had SNCU admissions in comparison with 36 (18%) babies in the control group. Out of them 24 (12%) babies had significant SNCU events in case group, whereas 8 (4%) babies had significant SNCU events in control group. The p value for SNCU admission was less than 0.001,

which was highly statistically significant. This finding implies that SNCU admissions were higher in babies born to elderly pregnant women in comparison to babies born to pregnant women between 19 to 35 years. A study conducted by Seda A and Gonca B in Turkey, also reported that SNCU admission was more prevalent in babies born to older mothers however the difference was not statistically significant (13).

CONCLUSION

We concluded from the present study that incidence of Prematurity, low birth weight, Small for gestational age and SNCU admissions was found more in babies born to elderly pregnant women than babies born to pregnant women less than 35 years of age. These findings portray the fact that babies born to elderly pregnant women have high perinatal morbidity and mortality.

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