

Comparative Analysis of Obstetrical Complications in Nepalese at Advanced Maternal Age

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Abstract:-

Objectives: The objective of this study was to compare the obstetrical complications of women at advanced maternal age (35years and above) with women of 20-34yrs of age.

Methods: This was a comparative cross sectional study done in pregnant women of ≥ 28 weeks period of gestation delivering in the Department of Obstetrics and Gynecology, Tribhuwan University Teaching Hospital from 13th April 2016 (1st Baisakh 2073 B.S.) to 13th April 2017 (31st Chaitra 2073 B.S.) over twelve months period. Women in the age group of 35years and above meeting the inclusion criteria were taken as case and their obstetrical outcome was compared with equal number of women of the age group 20-34years, who delivered immediately after the case.

Results: The prevalence of advanced maternal age in this study was 2.9%. Women of advanced maternal age were found to have an increased incidence of malpresentation (12% vs 2%; $p=0.001$). There were no significant difference between the two groups in the incidence of preterm labor and antepartum hemorrhage. The rate of cesarean delivery was higher among women of advanced maternal age group (57.1% vs 40%; $p=0.004$)

Conclusions: From this study, it can be concluded that women of advanced maternal age group had a higher incidence of malpresentation (mostly breech). They were more likely to be delivered by cesarean section. Although advanced maternal age group is considered to be a high risk pregnancy, they can expect a good pregnancy outcome with well supervised antenatal care and delivery.

Keywords:- Advanced maternal age, obstetric complications, malpresentation, cesarean section.

I. INTRODUCTION

Maternal age at child birth is increasing worldwide. The reasons being : changes in the structure of family with more late marriages, increasing rates of divorce followed by remarriages, women's pursuit of higher education and career advancement, advances in assisted reproductive technique, availability of effective and safe contraceptives, death of previous child, mental preparation for motherhood, husband usually abroad for job and in sometimes the concept of large family size, desire for male child (if all previous female child), poor acceptance of contraceptive method and contraceptives failure. Maternal age beyond 35 years (AMA) is considered to have more adverse pregnancy and

perinatal outcomes as compared to those in younger women and is therefore considered to be a "high risk" pregnancy.

There is an increased possibility of having medical disorders during pregnancy such as hypertensive disorders and diabetes mellitus with consequent increase in preterm delivery, premature rupture of membrane and antepartum hemorrhage. The rate of cesarean section increases with more interventions during delivery in the women of advanced maternal age. These complications often lead to hazards for both the mother and the child with consequent economic burden to the society. The myometrium is subject to change with age and the expulsion of the uterine contents seems to be less adequate, giving rise to a higher rate of dysfunctional labor. These factors may affect labor progress and may be partially responsible for the increasing cesarean delivery rate.

Collagen progressively replaces normal muscle in walls of myometrial arteries with advancing age of non-gravid women. This would affect almost every segment of every artery to some degree with age. It may restrict luminal expansion of arteries that restricts blood flow to the placenta in older women. This would decrease the uteroplacental blood flow evident with increasing age resulting in increased frequency of large placental infarcts, abruption placenta and placenta previa^[1]. Maternal hypertension more commonly seen in this group is also a predisposing factor for abruption placenta and placental infarcts.

The increase in cesarean section in advanced maternal age could be explained by the fact that there is impact of aging on myometrium efficiency and elasticity of pelvic joints. The underlying chronic diseases such as hypertension, diabetes mellitus might predispose to fetal growth disorder. It is also the factor causing increase in fetal distress during labor with increase in cesarean section rate. Also malpresentation, placental abnormalities are seen more frequently in advanced maternal age. Previous cesarean has been on the rise due to increase in primary cesarean.^[2] History of infertility may be present in women of age 35 years and above who might request for cesarean section which contributes to the rise in cesarean section in these women. Lastly there may be an increase in patient and doctor preference towards cesarean section due to the traditional held views that late maternal age poses significant risks.^[3]

It is postulated that increased maternal age predisposes to instrumental delivery because of myometrial dysfunction as a result of aging myometrium. It advances as maternal age progresses from the early fourth decade of life towards ages of more than forty years old.^[4] Other possible

hypothesis given are decreased pelvic compliance, reduced maternal efforts, decrease in estrogen receptors and anxiety by mother and obstetrician which leads to increased instrumental delivery. However, few recent studies have come up with different conclusions which state that there are no such adverse outcomes as above. The logic behind this conclusion is that these women conceive in optimal health, are well educated, have better psychosocial and economic support, better lifestyle, increased surveillance and medical care during pregnancy and have semi-urgent complications that allowed time for proper management which led to improved perinatal and neonatal outcomes.

In this study we are going to find out the prevalence of advanced maternal age and evaluate the obstetrical complications like preterm labor, antepartum hemorrhage, malpresentations and mode of delivery in Nepalese women.

II. METHODOLOGY

This was a comparative cross sectional study done in pregnant women ≥ 28 weeks delivering in the Department of Obstetrics and Gynecology, Tribhuvan University Teaching Hospital from 13th April 2016 A.D. (1st Baisakh 2073 B.S.) to 13th April 2017 A.D. (31st Chaitra 2073 B.S.) over twelve months period.

Pregnant women of age group 35 years and above were taken as case and the pregnant women of age group 20-34 years were taken as comparative group in the ratio of 1:1.

• Age Distribution

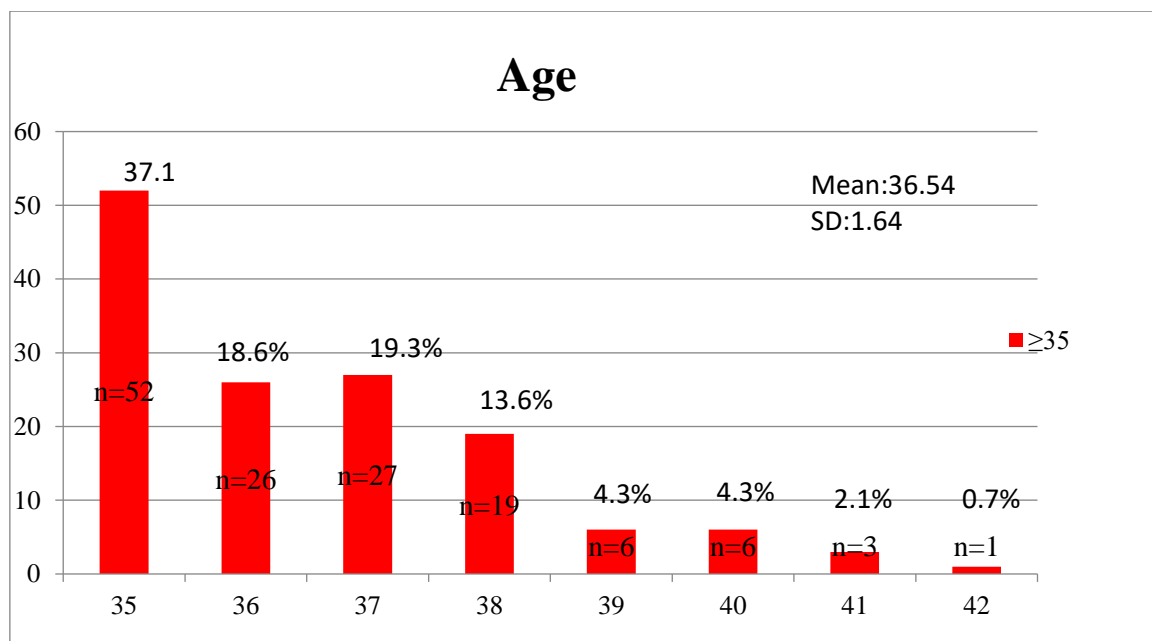


Fig 1: Age distribution of women of advanced maternal age group

Mean age in the advanced maternal age group was 36.54 with standard deviation of 1.64

The **maximum** number of women came under the age group of 35-37 yrs

The **minimum** number of women under the age group of 41-42

Women of gestational age ≤ 28 wks, women under 20 years and women who did not consent to participate in the study were excluded.

A structured questionnaire was used on all the study population and all of them were filled up. Information obtained were entered into the master chart. Computer software SPSS 20 was used for processing and analysis of the data. Chi-square (χ^2) test was used. Odds ratio to compare obstetrical outcome of women of advanced maternal age with women of 20-34 yrs was calculated. Confidence interval of 95% was taken and P value < 0.05 was taken as statistically significant

A. Ethical Consideration

Approval from the institutional review board of TUTH was taken. All the patients in the study were explained in detail about the study, followed by a written consent from all the patients prior to being included in the study. Only those patients who gave consent for the study were included. Confidentiality of all the information was ensured.

III. RESULTS

A. Prevalence of advanced maternal age in TUTH

Total deliveries in 12 months were 4817. **Total no of mothers of age ≥ 35 yrs during 12 months were 140. Therefore the prevalence of women of advanced maternal age was 2.90%**

B. Preterm Labor

There was increased incidence of preterm labor in advanced maternal age but this difference was **statistically insignificant**

Age (years)	Present	Absent	Total	P value	Odds ratio	95% confidence interval
≥35	10(7.1%)	130(92.9%)	140	0.453	1.462	0.540-3.956
20-34	7(5%)	133(95%)	140			

Table 1: Preterm labor in both the age groups

C. Malpresentation

Malpresentation						
Age (years)	Present	Absent	Total	P value	Odds ratio	95% confidence interval
≥35	17 (12%)	123 (88%)	140	0.001	6.312	1.806-22.058
20-34	3(2%)	137 (98%)	140			

Table 2: Malpresentation in both the age groups

There was higher incidence of malpresentation in the advanced maternal age group which was **statistically significant**.

D. Antepartum Hemorrhage

Antepartum Hemorrhage							
Age (years)	Abruptio placentae	Placenta Previa	Absent	Total	P value	Odds ratio	95% confidence interval
≥35	2(1.5%)	4(2.8%)	134(95.7%)	140	0.501	2.045	0.501-8.344
20-34	0	3(2.1%)	137(97.9%)	140			

Table 3: Antepartum hemorrhage in both the age groups

There was higher incidence of antepartum hemorrhage in advanced maternal age but this difference was **statistically insignificant**

E. Mode of Delivery

Mode of Delivery						
Age (years)	Cesarean section	Vaginal delivery	Total	P value	Odds ratio	95% confidence interval
≥35	80(57.1%)	60(42.9%)	140	0.004	2	1.243-3.219
20-34	56(40%)	84(60%)	140			

Table 4: Mode of delivery in both the age groups

This study showed that women of advanced maternal age were more likely to undergo cesarean delivery which was **statistically significant**.

F. Instrumental Delivery

Instrumental delivery						
Age (years)	Absent	Present	Total	P value	Odds ratio	95% confidence interval
≥35	59(98.3%)	1(1.7%)	60	0.625	0.695	0.062-7.884
20-34	82(97.6%)	2(2.4%)	84			

Table 5: Instrumental delivery in both the age groups

There was low incidence of instrumental delivery in both the groups.

IV. DISCUSSION

The prevalence of advanced maternal age was calculated to be **2.90**. When compared to other studies, the low prevalence of advanced maternal age in this study could be because only those women delivering in TUTH were taken for the study which is not representative of the national data. Women in Nepal get married at early age and

complete childbearing early. Many multiparous women at advanced maternal age could have had home delivery. Also the sample size of our study was limited which could be the reasons for difference in prevalence of advanced maternal age in this study.

In this study, iatrogenic preterm delivery secondary to hypertension, diabetes mellitus, antepartum hemorrhage and abnormal Doppler changes was excluded. The number of women having preterm labor was apparently more in women aged 35 and above compared to women in the age group of 20-34 years. This association however was not statistically significant. This may be due to the small sample size.

The odds of having fetal mal presentation in women aged 35 and above was six times that of the women in the age group of 20-34 years in this study. Among women aged 35 and above having breech presentation, it was found that 17.64% (n=3) women were nulliparas. 11.76% (n=2) women had preterm pregnancies both of which is a risk factor for malpresentation. 17.64% (n=3) women had low lying placenta, 17.64% (n=3) had fibroid uterus and 11.76% (n=2) women had oligohydramnios all of which might have contributed for malpresentation in this study.

In this study no association was found between advanced maternal age and antepartum hemorrhage which might be due to the small sample size.

In this study, the chances of having cesarean section in women of advanced maternal age was twice as that of women of 20-34 years. Among the women who had cesarean section in the advanced maternal age group, 82% (n=66) women were multiparous. More number of multiparous women means more number of women who underwent cesarean section in the past delivery. The increase in the rate of cesarean section in the study group was due to previous cesarean section. This could have caused high rate of cesarean section in the multiparous advanced maternal age group by increasing repeat cesarean section for previous cesarean section. Since the trial of vaginal delivery was less for the women in advanced maternal age group so the incidence of instrumental delivery was also less.

From this study, it can be concluded that women of advanced maternal age group had a higher incidence of malpresentation (mostly breech). They were more likely to be delivered by cesarean section. Although advanced maternal age group is considered to be a high risk pregnancy, they can expect a good pregnancy outcome with well supervised antenatal care and delivery

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