

Original Article

An Assessment of Fetomaternal Outcomes and Comparison Between Elderly and Younger Primigravida Conditions Among Pregnant Women

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Abstract

Objectives: The study aims to assess the fetomaternal outcomes in primigravida pregnant women and to compare the frequency of fetomaternal outcomes in elderly primigravida and younger primigravida pregnant women

Methodology: A cross-sectional study was conducted from January 2021- July 2021 at the Department of Obstetrics and Gynecology Gomal Medical College Dera Ismail Khan. A total of 125 female patients with Primigravida condition were included in the study, and followed till delivery. The data was noted in MS Excel and later on, analyzed using SPSS. The demographic details, complications, and fetomaternal outcomes (pregnancy-induced hypertension, pre-eclampsia, intrauterine growth restriction, fetal distress, cesarean section, low birth weight, and low Apgar score) were noted.

Results: Pregnancy induced Hypertension was observed among 8.8% of Primigravida patients, Preeclampsia in 5.6%, intrauterine growth restriction 7.2%, Fetal Distress 10.4%, C-Section 20%, Low Birth Weight 8%, and Low Apgar Score was 7.2%. Elderly primigravida was 20% and younger primigravida was 80%. Pregnancy Hypertension was observed in 8.8% (of patients, Preeclampsia 5.6%, intrauterine growth restriction at 7.2%, Fetal Distress 10.4%, C-Section was 20%, Low Birth Weight at 8%, and Low Apgar Score was 7.2%. Pregnancy Hypertension was seen in 20% of elderly primigravida as compared to 6% in young primigravida (p 0.027) as shown Preeclampsia was seen in 16% of elderly primigravida as compared to 3% in young primigravida

Conclusion: The study showed that elder women with primigravida have higher rates of Pregnancy induced Hypertension, intrauterine growth restriction, Fetal Distress and Preeclampsia as compared to younger women.

Keywords: Primigravida, Elderly, Younger, Fetomaternal outcome.

Cite this article as: Ruba N, Bibi N, Ghafoor M, Anbreen F, Roshan N. An Assessment of Fetomaternal Outcomes and Comparison Between Elderly and Younger Primigravida Conditions Among Pregnant Women. 2023; 13(3):272-276.

Introduction

The age of childbearing mothers has been shifting intensely over the last decades. The average age of mothers has been on the rise and reached 30 years in the year 2023¹ which is a remarkable increase compared to the previous number 29.8 years in 2012. The delayed age trend comes parallel to the USA and China is continually increasing in the developing countries and teenage pregnancy rates have been one of the critical medical conditions, teenage childbirths have dropped to

the rate of 61%, in the USA.^{2,3} The late reproductive ages are considered at the highest risk for complications in the pregnancy and other outcomes. The reasons could be any which can be determined by any factors, considering the biological immaturity, Socioeconomic outcomes, the behavioral risk factors, which eventually lead to complications like primigravida, low birth weights, leading to cesarean sections, and perinatal deaths.⁴

Various studies have been conducted on the complications associated with pregnancies, however, the majority of studies support the association of

Authorship Contribution: ^{1,2}Substantial contributions to the conception or design of the work, acquisition, or interpretation of data for the work, ^{3,5}Drafting the work or revising it critically for important intellectual content, ^{1,5}Final approval of the version to be published, ^{1,3}Active participation in methodology

Funding Source: none
Conflict of Interest: none

Received: Feb 27, 2023
Accepted: July 19, 2023

complications with maternal age, and preterm delivery, and few retrospective studies also found fetal outcomes for the elderly mothers.^{5,2,10} Méndez *et al.*, stated that the impact of maternal age is closely associated with infants, which has been observed in the frequent hospital admissions required by infants who were born to mothers of age 40 years and above⁶.

The maternal age is about adverse pregnancy outcomes, obstetrics complications, maternal morbidities, and several complications like primigravida, pregnancy-induced hypertension, and other risk factors⁷. The elder age pregnancy primigravida is on the rise requiring clinical treatment shall be addressed and managed appropriately.⁶ The different studies found the Elder primigravida relevant to elder pregnancies, they found that on average 1 out of 1,200 pregnancies are affected by fetomaternal hemorrhagic complications, and pregnancy-induced hypertension is the most common health concern⁸ the rate of recurrence is 0.5% in all pregnancies.^{2,7,8}

A study conducted on older women showed that in 54 elderly primigravida's with the age of 35 years or above and 120 younger primigravidas from 20 to 25 years of age, the frequency of pregnancy-induced hypertension was 22.2% in elderly primigravida as compared to 7.5% in younger primigravida, intrauterine growth restriction was 14.8% versus 8.3%, gestational diabetes mellitus 5.6% versus 0%, fetal distress 25.9% versus 8.3%, cesarean section 59.3% versus 16.7%, low birth weight 16.7% versus 8.3% and low Apgar score was 13.5% versus 7.5%. Although, there are numerous studies on advanced.⁷⁻⁸ Pregnancy is considered a temporary condition or state of the body with limiting outcomes, the total of 280 days cycle is considered as pregnancy.⁶

The maternal age with the status of pregnancy is a critical condition that may alter the response type of pathophysiological response The maternal age with the status of pregnancy is a critical condition which may alter the response type of pathophysiological response, the mimic response to the disease.⁹ The fetomaternal hemorrhagic condition is not common yet it is a severe and life-threatening condition, with expected low birth weight, resuscitation hemorrhage with hypertension induced by pregnancy, diabetic episodes, and other major morbidities and increased risks for maternal deaths. The absence of fetal movements is also one common condition. The slow improvements in the cases have been reported in various studies.¹⁰

If the elder woman with pregnancy is exposed to a certain health condition the complication status may get worse hence influencing the infant along with the mother. Pregnancy-induced diabetes and hypertension are the most common health conditions faced by elderly mothers thus leading to severe outcomes¹¹. Hence the current study aims to assess the fetomaternal complication in older and younger women with primigravida.

Methodology

A cross-sectional Study was conducted in the Department of Obstetrics and Gynecology, Gomal Medical College, Dera Ismail Khan for the period of 6 months from 10th January 2021 to 10th July 2021. The Sample size was calculated by convenient sampling technique, The sampling technique used was non-probability consecutive sampling. Women of age 18-40 years, Singleton pregnancy on ultrasound, having Gestational age >20 weeks on LMP and Primigravida were included in the study. However, the women with complications and not willing to participate were excluded from the study. A total of 125 sample size was calculated using WHO software using the least frequency of low Apgar score of 13.5%, Confidence interval 95%, margin of error 6%.

After obtaining the ethical consent from the hospital committee an explanation about the study was given to all participant's patients and informed consent was obtained after explaining the risk and benefits of the study.

All women were followed till delivery and fetomaternal outcomes, variables of the current study (pregnancy-induced hypertension, preeclampsia, intrauterine growth restriction, fetal distress, cesarean section, low birth weight, and low Apgar score) were noted as per operational definition by the researcher. All the above data was noted on specially designed proforma. The patients with primigravida condition who were willing to participate were included in the study.

The data was collected and stored in ms excel and expressed as per the objectives of the study, the categorical variables were expressed in frequency and percentage, and compared in both groups. The continuous variables were expressed in mean and standard deviation The analysis of data was done using SPSS. Frequency and percentage were computed for qualitative variables like residential status, education level, primigravida (elderly/younger as per operational

definition), pregnancy-induced hypertension, preeclampsia, intrauterine growth restriction, fetal distress, cesarean section, low birth weight, and low Apgar score.¹¹ Mean±SD was expressed for quantitative variables like age, and gestational age.

Fetomaternal outcomes were compared among primigravida (elderly versus younger) value of $p \leq 0.05$ was considered statistically significant. Data was stratified on residential status, education level, and gestational age to see the effect of fetomaternal outcomes between young and elderly primigravida. Post-stratification chi-square test was applied $p \leq 0.05$ was considered statistically significant.

Operational definition of primigravida condition: The elderly primigravida as per definition: A woman with first pregnancy with age ≥ 35 years.¹⁰ The younger primigravida is defined as a woman with first pregnancy at age ≤ 25 years.¹⁰

Results

The age range in this study was from 18 to 40 years with a mean age of 25.288 ± 5.88 years and a mean gestational age was 29.168 ± 2.58 weeks. Table I provides demographic information, age, and gestational age of the study participants.

Table I: Demographics, age, and gestational age.

| Variable | Mean±SD |
|---|-------------|
| Mean Age in Year | 25.288±5.88 |
| Gestational age (weeks) | 29.168±2.58 |
| Residential Status | |
| RURAL | 48 (38.4%) |
| URBAN | 77 (61.6%) |
| Educational Status | |
| Uneducated | 41 (32.8%) |
| primary | 45 (36%) |
| Secondary | 30 (24%) |
| Graduate | 5 (4%) |
| Higher | 4 (3.2%) |
| Patients according to Primigravida | |
| Elder | 25 (20%) |
| Younger | 100 (80%) |

Table II presents data on patients with underlying conditions (complications), summarizes the distribution of complications among primigravida patients. Elderly primigravida accounted for 20% of the total, while younger primigravida comprised 80%. The prevalence of complications included 8.8% for Pregnancy Hypertension ($p = 0.027$), 5.6% for Preeclampsia ($p = 0.011$), 7.2% for intrauterine growth restriction ($p = 0.001$), 10.4% for Fetal Distress, 20% for C-Section, 8% for Low Birth Weight, and 7.2% for Low Apgar Score. Notably,

Pregnancy Hypertension was more common among elderly primigravida (20%) compared to young primigravida (6%) with a significant p -value of 0.027, and Preeclampsia was more prevalent in elderly primigravida (16%) than in young primigravida (3%) with a significant p -value of 0.011. (Table II).

Table II: Patients with underlying conditions (Complications)

| The underlying condition of patients | N(%) | P Value |
|---|--------------|---------|
| Patients with Pregnancy Hypertension | | |
| YES | 11 (8.8%) | 0.027 |
| NO | 114 (91.2%) | |
| Patients according to Preeclampsia | | |
| YES | 7 (5.6%) | 0.011 |
| NO | 118 (94.4%) | |
| Patients according to Intrauterine growth restriction (IUGR) | | |
| YES | 9 (7.2%) | 0.001 |
| NO | 116 ((92.8%) | |
| Fetal Distress | | |
| YES | 13 (10.4%) | 0.013 |
| NO | 112 (89.6%) | |
| c-section | | |
| YES | 25 (20%) | 0.000 |
| NO | 100 (80%) | |
| Low birth weight | | |
| YES | 10 (8%) | 0.099 |
| NO | 115 (92%) | |

The fetal distress was seen in 10.40% of patients, Low Apgar Score was seen in 7.20% of elderly primigravida as compared to 6% in young primigravida ($p = 0.299$). The primigravida was seen in 20% of the cases. The cesarean section happened in 20% of the cases as shown in figure 1.

Discussion

The fetomaternal outcomes in young and elder Primigravida condition was assessed among pregnant women and our study found the primigravida condition in 20% of the women whereas the results of the study conducted by Chan's study had a prevalence of 24.9%.¹²

Age is one of the important factors counted during the pregnancy which is associated with multiple factors, including the patient's physiological changes, and awareness the age range in this study was observed from 18 to 40 years and studies have shown similar results with a mean age of 25.288 ± 5.88 years^{2,8,11} however the mean gestational age was noted 29.168 ± 2.58 weeks in this study which has been observed 20- 35 ± 2 weeks in different studies conducted previously.^{3,5,10}

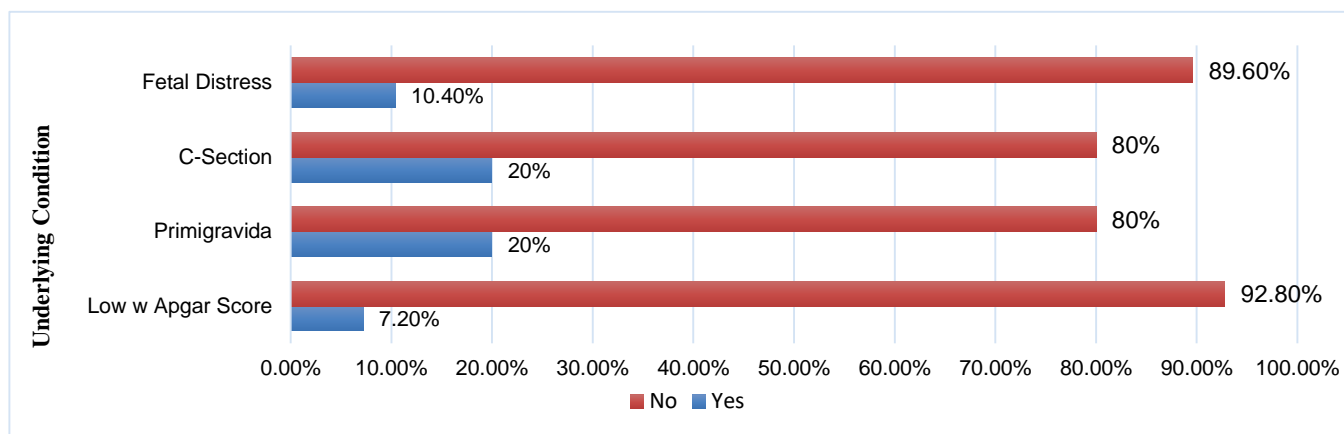


Figure 1. Frequency and percentage of patients according to their condition.

Education and awareness regarding basic health, fetomaternal issues, and healthcare concerns play a vital role in achieving a better quality of life and understanding of maternal care. The education status showed, a wide variety of a greater number of women with uneducated backgrounds 32.8%, 36% of women stated primary level of education, which is comparatively lower in the percentages to the other studies conducted only a few i.e. 3.2% of educated higher than the graduation level, and 4% showed a level of education at graduation level.¹³

In a developing country like Pakistan general health awareness is a mandatory need for maternal and child health. Pregnancy Hypertension was seen in 20% of elderly primigravida as compared to 6% in young primigravida (p 0.027) which shows an agreement with the studies conducted previously however with a slightly higher percentage. Preeclampsia was seen in 16% of elderly primigravida as compared to 3% in young primigravida (p 0.011). Intrauterine growth restriction IUGR was seen in 12% of elderly primigravida as compared to 6% in young primigravida (p 0.229) similar outcomes were reported by another study conducted by Rana et al., to assess the preeclampsia.¹⁴

In our study the fetal Distress was seen in 24% of elderly primigravida as compared to 7% in young primigravida (p 0.013) C-section was seen in 52% of elderly primigravida as compared to 12% in young primigravida (p 0.000) the Low Birth Weight was seen in 16% of elderly primigravida as compared to 6% in young primigravida (p 0.099) which is supported by the results of studies showing the fetomaternal outcomes.¹⁵⁻¹⁶ The fetal distress was seen in 10.40% of patients, Low Apgar Score was seen in 7.20% of elderly primigravida as

compared to 6% in young primigravida.¹⁴ The primigravida was seen in 20% of the cases. The cesarean section happened in 20% of the cases similar results were found in the other studies supporting the results of this study¹⁷⁻¹⁸ the Low Apgar Score was seen in 12% of elderly primigravida as compared to 6% in young primigravida as shown in a study.¹⁹

A study has shown that in 54 elderly primigravidas (aged ≥ 35 years) and 120 younger primigravidas (aged 20-25 years) frequency of pregnancy-induced hypertension was 22.2% in elderly primigravida as compared to 7.5% in younger primigravida, intrauterine growth restriction was seen in 14.8% of women versus 8.3%, gestational diabetes mellitus 5.6% versus 0%, fetal distress was seen in 25.9% women versus 8.3%, cesarean section 59.3% versus 16.7%, low birth weight 16.7% versus 8.3% and low Apgar score was 13.5% versus 7.5%.¹⁴ A study conducted on primigravida has shown that the frequency of preeclampsia was 19.2% in elderly primigravida as compared to 4.1% in younger primigravida, IUGR was 6.8% versus 11% and cesarean section was 38.4% versus 21.9%.¹⁹⁻²⁰

The findings of our study showed a contrast to the similar study conducted by Shehadeh A., and no significant difference was observed.¹⁶ However, the fetal abnormalities and severe complications other than hypertension, C-Section, and Low birthweights were observed in various other studies which can be addressed at the moment, the fetal abnormalities²¹⁻²⁴ are of great concern and should be addressed in developing countries like Pakistan. The babies with low birth weight were noticed in the elderly primigravida in comparison to 10 (8.3%) in the comparison group which is supported by the studies.²⁵

Conclusion

The complications like pregnancy-induced hypertension, retardation in growth, and cesarean section were found more prevalent among the elder women with primigravida condition compared to the early primigravida. The counseling session before conception and complications of late pregnancies should be discussed properly with the women by the physician and gynecologists. The finding suggests the importance of education and awareness towards maternal health and infants' quality of life. The standardized referenced pregnancy protocols shall be suggested to avoid pregnancy-induced complications to optimize the maternal health outcomes the healthcare system shall work actively in promoting awareness maternal health education, and infant health. All women should be aware of pregnancy adverse outcomes and focus on the pregnancy expectations in a healthcare system

ACKNOWLEDGEMENT

The authors would like to acknowledge the Medical Affairs department of Getz Pharma for their technical support and assistance in Data Analysis.

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