

OBSTETRICAL RISKS WITH INCREASED MATERNAL AGE 35 > YEARS

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ABSTRACT

Objective: To compare the obstetrical risks and complications of increased maternal age > 35 years with maternal and perinatal outcome of younger age women <35 years.

Study Design: A comparative study.

Setting & Duration: Department of Obstetrical and Gynaecology at Fatima Hospital of Baqai Medical University.

Methodology: Group "A" include one hundred and fifty elderly pregnant women to compare maternal and perinatal outcome. With Group "B" of Hundred pregnant women as a control group. Observation were recorded by research proformas and data analysis was done by SPSS version 11.0. Results were compared using Chi-Square test, by keeping the P-value of < 0.05 as significant.

Results: Among the antenatal complications of increased maternal age, abortions in early half and preterm labour in second half of pregnancy were detected as most frequent complications (i.e. 18.6% vs. 18%), (P-value=0.159 and 0.013). Hypertension and Diabetes were more common than in younger age group (P-value=0.022 and 0.065). PNMR (perinatal mortality rate) was higher in the same group (127 vs 80). Risk of foetal malformation was also three folds more than younger age group (3.3% vs. 1%). Increased rate of C-Section was more with advance maternal age of high parity (18% vs. 8%), (P-value=0.014).

Conclusion: The parturient of advance maternal age is a patient with high risk of maternal and perinatal morbidity and mortality. Appropriate management plan can be formulated to ensure better maternal and foetal outcomes during pregnancies. Post partum follow ups especially for underlying co-morbidities (e.g. hypertension and diabetes) also reduces the risk of complications for future pregnancies.

KEYWORDS: Advance Maternal Age, Maternal Outcome, Perinatal Outcome, C-section

INTRODUCTION

Delayed child birth has become a common phenomenon in the developed world because of their social, educational and economical factors. But now a days, infertility leading to assisted reproductive techniques especially after the age of 35 or more are becoming so common in either developed as well as under developed countries.^{1,2} In spite of this, still the older parturients i.e. age > 35 years constitute a larger and growing fraction of our obstetric patients population.

Any pregnancy at > 35 years of age are always at increased risk for the magnitude of antenatal complications like; abortions, preterm labour, pre eclampsia or hypertension which may or may not be associated with IUGR, gestational diabetes, antepartum haemorrhages and increased rate of C-sections.³ All of these have been associated with adverse maternal and foetal outcome in terms of morbidity and mortality. So for the management of parturients of elderly age i.e. > 35 years, it requires an understanding of the effect of biological age, pre-existing co-morbidities as the complications during pregnancy and delivery^{4,5} which may prevent a healthy pregnancy. Despite the decrease in risk over the past 20 years, women at 35 or older age remains at risk of pregnancy related complications like, sudden maternal deaths from underlying causes.

The aim of this study is to observe the effect of increase maternal age > 35 years and obstetric outcome in the comparison with the outcome of pregnancies of women < 35 years of age (in between 20-34 years of age) which

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is non high risk group.

METHODOLOGY

This study was carried out in the department of Obstetrics and Gynaecology, Fatima Hospital at Baqai Medical University over a period of one year. i.e. 1st January till 31st December 2008. A total of 1180 deliveries were conducted. One hundred and fifty pregnant women of older age > 35 years were selected as a test Group A to see the biological effect of the age on the pregnancy outcome and compare it with younger age Group B i.e. between 20-34 year age. Other younger pregnant women were excluded as a teenage pregnancies i.e. <19 year of age, making 930 pregnancies which were excluded from the study.

Over 250 pregnant women were studied in terms of their maternal and perinatal complications. The data was recorded by mean of a specially designed research proforma. All details regarding the bio data, booking status, parity, address, socioeconomic status, gestational age and other maternal complications like abortions, hypertension, gestational diabetes, antepartum haemorrhages along with mode of deliveries and associated perinatal outcome were recorded. Past medical and surgical history and detailed obstetrical history were also noted.

All patients were undergone general physical examinations and routine laboratory tests like Blood CP, Blood group, RBS, Urine DR and Hepatitis B and C screening. Special test like "Oral glucose tolerance test" for GDM was done accordingly. For medical problems such as uncontrolled hypertension and gestational diabetic patients were evaluated in detail after consultation from

medical department during and for future follow ups. All teenage pregnant women age < 19 years and all women whose deliveries were not conducted at Fatima Hospital either admitted in the antenatal period or in post partum period were excluded from this study.

RESULTS

During the period of one year, there were total 1180 deliveries were conducted at Fatima Hospital. Out of which 150 were belonged to Group "A". So the pregnancy of elderly women age > 35 years were 12.7%. The mean age of pregnant women was 38.61±0.631 years and majority of these patients in either group A and B were non booked i.e. 74.3% vs. 67.8%. As it is shown in Table I, parity had a direct influence in increasing the risk of pregnancy and complicate the mode of delivery P-value=0.001. Risk of Preterm birth was mostly associated with high parity in elderly women P-value=0.013. Spontaneous or recurrent abortion of first and second trimester were likely to be depended upon other underlying factors along with increasing age of pregnant women P-value=0.159. Medical problems like hypertension and gestational diabetes were also shown a positive association with respect to increasing age P-value=0.022 and 0.065. Further obstetrical complications like, placenta previa and placental abruption had no direct association only with increasing age of mother in our study P-value = 0.188 and 0.918.

The overall perinatal outcome was P-value = 0.36 and perinatal mortality was high 127.8% in Group A as compared to PNMR of the Group B (80). Similarly increasing maternal age along with multiparity had become a significant risk factor for high C-section rate P-value = 0.014.

Table I. Maternal outcome in elderly versus younger pregnancies

Risk Factors	Age > 35 (n=150)	% Age	Age < 35 (n=100)	% Age	P-value
Parity (P0+0)	20	13.3	31	31	0.001
(P1 - 4)	90	60	56	56	0.001
(P > 5)	40	26.6	13	13	0.001
Abortions	28	18.6	12	12	0.159
Preterm Labour	27	18	7	7	0.013
HTN	11	7.3	1	1	0.022
GDM	5	3.3	--	--	0.065
Placenta Abruptio	8	5.3	7	7	0.918
Placenta Previa	10	6.6	2	2	0.188

Risk Factors	Age > 35 (n=100)	% Age	Age < 35 (n=150)	% Age	P-value
IUDs	11	7.3	7	7	0.366
NNDs	6	4	1	1	0.366
Alive	133	88.6	92	92	0.366
Congenital Malformed	5	3.3	1	1	0.238
PNMR	127.8	--	80	--	--

Table II. Perinatal outcome in elderly vs. younger pregnancies

DISCUSSION

Being an underdeveloped country, still majority of population are living in rural areas where there were no proper antenatal care facilities were available. Early marriages leading to teenage pregnancies with a continuation of child bearing process till the extreme of reproductive ages, would further increasing the risk for a magnitude of adverse obstetrical outcome. Pregnancy rate for women 35-39 years old increased 74% between 1976 and 1997 with a concomitant increase of 38% for women of 40 years old and older.^{7,8} They have 2 to 3 folds higher risk of morbidity as well as mortality than women in between twenties and risk become more dramatic if they are > 40 years old⁹. This study represented more or less the same but unfortunately no proper collective national data is available regarding the maternal and foetal risk of pregnancy at > 35 years of age. Mehreen detected the obstetrical risk in older primary gravida age = 35years¹⁰ and our result were also found to be quite comparable with her study. Various studies have been carried out globally to identify and assess the complications of pregnancy with increasing maternal age. The recent reports provided the evidence for direct correlation between increasing miscarriages as a result of aneuploidy in elderly women.¹¹ Although advance maternal age is a self predictor of miscarriages, as seen in our study that the frequency of abortions was (18%) which was higher than younger age group (i.e. 12%) but other causes of abortions besides aging need to be individualized.

Parity either of low or high in the extreme of reproductive age is always very important in regard of obstetrical management, as most of multigravida are at risk of preterm labour and C-section due to various reasons. Similarly nulliparous elderly pregnancies usually have low birth weight babies even at term.¹² In this study 72% of all preterm labour was found in multiparous women and 11.1% of all preterm pregnancies of increased maternal age had C-section. The overall frequency of preterm labour of elderly women was double than

younger age group and 1/3 of them had unsatisfactory perinatal outcome, as scientifically it is proven that increasing maternal age contributes to an increased incidence of preterm labour and delivery.¹²

All aging women developed underlying co-morbidities which may or may not be symptomatic at the time of preconception. It usually involves the whole metabolic changes that occur in the body, causing more vascular resistance, inflammatory responses and glucose intolerance. It is probably because of "cell" sensitivity falls causing more insulin resistance with increasing age. During pregnancy it represents as hypertensive crisis, IUGR, GDM and poor perinatal outcome, in both nulliparous and multiparous women.¹³⁻¹⁸ All these patho physiological responses were also detected in our studied population in terms of hypertension and gestational diabetes P-value = 0.02 and 0.625 and medical consultation for their detailed evaluation in intrapartum as well as in post partum period was done. Regarding the abnormal placentation which is more commonly associated with increasing maternal age as well as high parity, although the absolute risk was small if compared to younger age group 0.25% vs. 0.03%.¹⁹ This study also confirmed the negligible risk for placenta abruption and previa P-value = 0.918-0.188. Schotz suggested that higher rate of C-sections in elderly group was mainly due to higher incidence of obstetrical complications. The incidence is more likely associated with dystocia that causing dysfunctional labour after deteriorating myometrial function with increasing age.²⁰ For such reasons, obstetrician showed a lower threshold to perform emergency C-section, creating a new acceptance for primary elective cesarean delivery.¹⁹ Our findings were also consistent with various studies P-value=0.014.

Perinatal mortality was greater in elderly pregnancies as compared to younger age group, commonly due to preterm labour. Other causes like congenital malformations, IUGR, LBW and macrosomia were also detected, reflecting poor intrauterine reserve and uroplacental insufficiencies since the time of conception till delivery.

In different studies, foetal abnormalities and still birth were twice in aging women rather than younger women.²¹ Similarly in this study, rate of foetal anomaly was 3 times more than younger age group (Table II). Surprisingly no maternal mortality were reported in a studied population of both groups, inspite of various obstetrical complications, which was entirely opposite in other studies.⁹

CONCLUSION

As women ages, they have a greater opportunity to acquire conditions that can influence their health during their pregnancies. Understanding the evidence surrounding these outcomes may provide evidence for interventions and policies in clinical medicine and health care system. That will result in improving the experience of pregnancies of all women age > 35 years. Along with this, a comprehensive review of all maternal and foetal complications associated with aging women should be a part of awareness and counseling to all pregnant women.

REFERENCES

1. Dildy G A, Jackson G M, Fowers G K. Very advance maternal: Pregnancy after 45. *Am Journ Obstet Gynaecol* 1996; 175: 668.
2. Dulitzi M, Soriano D, Schiff E. Effect of very advance maternal age on pregnancy outcome and rate of C-sections delivery *Obstet Gynaecol* 1998; 92: 935-39.
3. Nesbitt I D E, By the U V, Redfern N. Anesthetic management of C-section in an elderly parturient with eclampsia. *Anesthesia* 1999; 54: 879-98.
4. Raymond E G, Cnattigius S, Kielly J L. Effect of maternal age, parity and smoking on the risk of still birth. *Br Journ Obstet Gynaecol* 1994; 101: 301-6.
5. Bianco A, Stone J, Lyneh L. Pregnancy outcome at age 40 years and older. *Obstet Gynaecol* 1996; 87: 917-22.
6. Wilhani M, Callaghan M D, Cynthia J, Berg M D. Pregnancy related maternal motality among women age 35 years and older, United State 1991-97. *The Am Coll Obstet Gynaecol* 2003 102(5): 1015-21.
7. Ventura S J, Mosher W D, Curtin S C, Abma J C, Henshaw S. Trend in pregnancies and pregnancy rate by outcome 1976-96. *Natinal centre for health statistics Vital Health Stat* 2000; 21-56.
8. Ventura S J, Mosher W D, Curtin S C, Abna J C, Henshaw S. Trend in pregnancy rate for United States An update *National centre of health statistics* 2001; 49(13): 1-16.
9. Berg C J, Chang J, Callaghan W M, Whitehead S J. Pregnancy related motality in the United State, 1991-97 *Obstet Gynaecol* 2003; 101: 289-96.
10. Mehreen M N, Azra N. Obstetrical risk in older primigravida. *JCPSP* 2004; 14: 278-28.
11. Effect of maternal age on the frequency of cytogenetic abnormalities in human oocytes cytogenetic and genome research 2005; 111: 206-2.
12. Chan C C, Loa T T. Effect of parity and advance maternal age on obstetric outcome. *Int J Gynaecol Obstet* 2008; 102(3): 237-41.
13. Asif K, Hameed A, Rana S. Maternal and fetal outcome in pregnancy with diabetes. *Pak Journ Obstet Gynaecol* 1999; 12: 45-50.
14. Jolly M, Sebire N, Harris J. The risk associated with pregnancy in woman age 35 years of older. *Human Reproduction* 2000; 15(11): 2433-37.
15. Michlin R, Qettinger M, Odeh M. Maternal Obesity and Pregnancy outcome. *Isr Med Association Journ* 2000; 20: 10-13.
16. Clearly-Goldman J, Malone F D, Vidarver J. Impact of Maternal age on Obstetric outcome *Obstet Gynaecol* 2005; 105: 983-990.
17. Paulson R J, Boostanfar R, Saadat P. Pregnancy in the sixth decade of life. Obstetric outcome in women of advance reproductive age. *JAMA* 2002; 2288-2320.
18. Chloe V, Ruth C F. Pregnancy and advance maternal age. *Progress in Obstetric and Gynaecology* 2006; 17: 113-24.
19. Scholtz H S, Hass J, Petru E. Do primigravidas age 40 years and older carry an increased obstetrical risk. *Prev Med* 1999; (29): 263-266.
20. Abu Heija A T, Jallad M F, Abukteish F. Maternal and perinatal outcome of pregnancies after age of 45. *Obstetric Gynaecol Res* 2000; 26(1): 27-30.
21. Miller, David A. ACOG practice Bulliten. *American Journ Obstet Gynaecol* 2005; 192: 1981-82.