OCTOBER-DECEMBER 2012

MEDICAL CHANNEL

Original Article

PREGNANCY OUT-COME IN MATURE GRAVIDA IN INDUSTRIAL AREA OF KARACHI, PAKISTAN

1. **ATIYA FASIH**
2. **ASHA MAHESH**
3. **FARZANA AAMIR**

1. ***Asst. Professor ob/gyn***
   Department of Obstetrics and Gynecology,
   Jinnah Medical College and Teaching Hospitals, Plot No. 6 Sector 3, Korangi Industrial Area, Karachi, Pakistan.
2. ***Associate professor ob/gyn***
   Department of Obstetrics and Gynecology,
   Jinnah Medical College and Teaching Hospitals, plot No. 6 Sector 3, Korangi Industrial Area, Karachi, Pakistan.
3. ***Asst.professor ob/gyn***
   Department of Obstetrics and Gynecology,
   Jinnah Medical College and Teaching Hospitals, plot No. 6 Sector 3, Korangi Industrial Area, Karachi, Pakistan.

Corresponding Author
DR. ATIYA FASIH
L 22 Block 12 Gulistan e Jauhar
Karachi Pakistan.
Ph # 021 4636175.
Cell # 0323 2629 272
atiyafasih@hotmail.com

ABSTRACT

Introduction: Pregnancy at > 35 yrs of age has been considered high risk. Many adverse outcomes were attributed to high maternal age in different studies. The present study evaluates the obstetrics performance in mature gravidae at a tertiary care center.
Material and Method: Women delivering at the age of 35 years and above, (study group) and gravidae delivering at the age of 20-34 years (control group). From Jan 1, 2008 to June 30, 2011.
Details of women > 35 years of age, after enrolment, were recorded. For control group, details of the woman delivering consequent to the mature gravidae were noted.
Main Outcoe Measures: Spontaneous abortion, gestational hypertension (PIH), gestational diabetes (GDM), preterm delivery (PTD) placental abruption, placenta previa, operative vaginal delivery, (OVD), cesarean delivery(C/S) and Macrosomia were the main outcome measures.
Results: The frequency of mature gravida in our study (1187 patients) was 8.9%. PIH & GDM were the commonest complications encountered in the study group. The incidence of, OVD, C/S and Macrosomia were higher then the controlled group.
Conclusion: In mature gravidae, maternal and fetal outcomes were generally good, but there was a high incidence of antenatal and intrapartum complications. This information may be helpful for counseling mature gravida who are considering pregnancy.

Key words: Advance maternal age, obstetric performance.

INTRODUCTION:

Over the past several decades, economic, technologic, and social changes in the developed world have significantly increased the number of women who delay childbirth to their late 30s and beyond. The intention to conceive and the timing of conception are complex issues influenced by many factors. Understanding the potential outcomes of pregnancy at an advanced maternal age may constitute one of these factors.
The term, elderly gravida was first defined in 1958 by the council of International Federation of Obstetrics as one aged thirty five years or more at the time of delivery. The term elderly appears rather inappropriate for women in her third or fourth decade of life, as elderly refers to one bordering on old age[1].
The term mature gravida is less offensive. Mature is defined as having completed natural growth and development, having attained a final state[2]. Mature gravida is looked upon as a special problem where pregnancy and labour require close supervision and vigilance.
Between 1980 and 1993 in the European Union, the mean maternal age at first birth rose by 1.5 years, from 27.1 to 28.6 years[3]. Between 1991 and 2001 in the United

States, the percentage of first births for women 35–39 yrs of age increased by 36%[4,5]. This huge demographic shift has become an important public health issue, since numerous studies have indicated that increased maternal age is associated with an increased risk of maternal morbidity, obstetric interventions, and adverse pregnancy outcomes[6-10]. Now, almost 10% of pregnancies occur at the age of over 35 [11, 12].

Studies on the relation between increased maternal age and adverse pregnancy outcome have led to inconsistent conclusions. We therefore conducted a study in tertiary care teaching hospital in Pakistani setting to further explore the association between advanced maternal age and adverse pregnancy outcome.

MATERIAL AND METHODS

A comparative descriptive study was done on 1187 pregnant women who delivered at Jinnah medical college hospital between 1, Jan 2008 to 30, June 2011.

The following adverse pregnancy outcomes were considered in the subjects studied: Spontaneous abortion (fetal loss before 24 weeks). Gestational hypertension (blood pressure >140/90 on at least 2 occasions 4 hours apart without evidence of chronic hypertension or significant proteinuria after 20 weeks of pregnancy). Gestational diabetes (WHO criteria). Preterm delivery (delivery before 37 completed weeks of gestation). Macrosomia (birth weight>4.0 kg). Placental abruption (premature separation of a normally implanted placenta). Placenta previa (placenta completely or partially covering the internal cervical os at the time of delivery). Cesarean delivery. Perinatal loss.

There were 106 mature gravida. For comparison, all the 1081 women who delivered during the same period were used as a control group. The clinical data of study was retrieved from the case notes of women in the medical record room.

Data analysis was performed to evaluate the effect of maternal age on the specific pregnancy outcomes, considered separately. All analyses were performed with spss 17. Fisher exact test and chi square test were applied.

Inclusion criteria: Women more then 20 years of age, Singleton pregnancy with no known co-morbid and women with Spontaneous conception were included.

Exclusion criteria: women under 20 years, the record about suffering from urinal- genital infections in the present pregnancy, smoking and addicted women, the pregnancy with the reproductive aid methods, twin or higher order pregnancy in present pregnancy, suffering from known physical and mental diseases including the heart, kidney and immune diseases, all kinds of cancers, hepatitis, evident diabetes, sexually transferred diseases.

RESULTS

A total of 1187 patients presented to Jinnah Medical College Hospital were chosen among 1262 patients. The reason for 75 drops was age less than 20 years, suffering from known physical and mental diseases or any other factor present in exclusion criteria.

The frequency of mature gravida in our study was 8.9%.The occurrence of spontaneous abortion in our study was 2% as compared to 0.8% in the control group.

Pre-eclampsia was the most common complication in the study group. It occurred in 16% of the patients compared to 7% in the control group witch is statically significant. Diabetes mellitus occurred in 12% of pregnancies in the study group compared to 7% in control group and p value was 0.033, statically significant. 2.8% of the study group had placenta previa and 1.9% had abruption placentae as compared to 2% and 1.4% respectively in the control group.

Preterm delivery occurred in 8.5% of study group as compared to 7% in control group. The instrumentation rate in the study group (14%) was higher then in the control group (8%). Abdominal delivery occurred in 46% of patients in the study group as compared to 29 % in control group. The frequency of macrosomia in our study was 8.5 % as compared to 4% in control group. P value of OVD, C/S and macrosomia all were statically significant. Perinatal mortality rate in our study group is similar to that of control group.

DISCUSSION

The frequency of mature gravida in our study is similar to the incidence quoted by (Cunningham et al., 2005)[11] and in other studies, it varied between 1.1%[13] to 17 %[7].

The incidence of spontaneous abortions in women 35 years of age & over has been found to be significantly increased.[14, 15.] In majority, the cause is genetic malformation, as one would surely expect, so the mature women must be informed of the increase in number of aneuploid conceptions and potential increased spontaneous abortion.

One aspect, which is less easily influenced by modern techniques, is the ageing of the cardiovascular system, a phenomenon that can be expected to interfere with the normal haemodynamic adaptation of pregnancy. The impact of cardiovascular ageing on pregnancy is

reflected in an age-dependent rise in cardiovascular complications during pregnancy. The incidence of pregnancy-induced hypertension (PIH) in 25–29 year old nulliparous and multiparous women amounts to ~7 and 3%, respectively. By the age of 35 years in women matched

with the controls, these incidences have doubled to 14 and7% respectively [16]. Pre-eclampsia was the most common complication in the study group. Tysoe[17] reported an incidence of 14% for elderly Primigravida and 6% for Primigravida between age of 25-29 from four major hospitals in Vancouver, Canada from 1963-67. Obstetric literature uniformly agrees that there is a

TABLE 1
Percentage of obstetrics complication by maternal age.
*** indicates statistically significant p value.**

Complication	>35 years	<35 years	P value
spontaneous abortion	2%	0.8%	0.257
PIH	16%	7%	0.000*
GDM	12%	7%	0.033*
P. previa	2.8%	2%	0.389
Abruptio placentae	1.9%	1.4%	0.457
Preterm delivery	8.5%	7%	0.282
Operative vaginal delivery	14%	8%	0.020*
C- section	46%	29%	0.000*
Macrosomia	8.5%	4%	0.024*

FIGURE 1:
Graphical representation of antenatal obstetrical complications (in percentage) by maternal age.

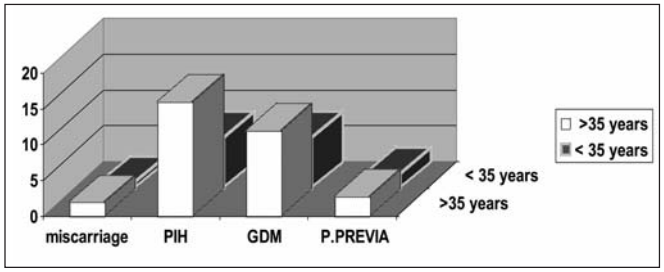
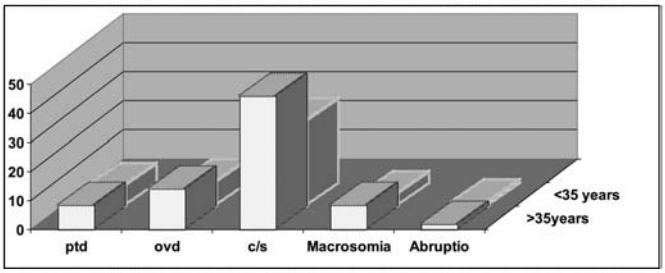


FIGURE 2 :
Graphical representation of some of obstetrical complications (in percentage) by maternal age.



positive association between age and both chronic and pregnancy induced hypertension.

With advancing age, there is an increase in the incidence of gestational diabetes[1] .Data from Mestman et al[18] showed the percentage of abnormal glucose tolerance test increased from 3.7% in women less than 20 years old to 7.5% for those 20-30 years and 13.8%for those over 30 years.

Regarding placenta previa placental abruption one large report, the incidence of placenta previa was slightly greater in older patients but it is related to the parity of patients[17]. Abruptio placenta also increases with age and this finding is interwoven with the variable of increased parity. This is supported by Potterson study[19].

There is still controversy about the relationship between maternal age and neonatal outcome in terms of prematurity and neonatal mortality. Most recent reports indicate a lower incidence of prematurity in older pregnant women than in their younger counterparts. The obstetrics literature is inconsistent about the incidence of premature labour of mature gravidae. Walters[20] demonstrated an increase for older women whereas Kessler[21] did not.

The instrumentation rate in our study was higher. This is also supported by Kirz DS and Booth & Williams study[1, 22]. Although specific obstetrics indications are usually involved, but the maternal age also strongly contributed to the decision to intervene.

The myometrium is also subject to change with age the incidence of myomas is increased and the expulsion of the uterine contents seems to be less adequate, giving rise to a higher rate of dysfunctional labour and consequently a higher rate of Caesarean births. The higher abdominal delivery rate in our study is also supported by other studies[21]. The reasons for this were medical complications present (PIH GDM), uterine pathology, physician and patient apprehension. Advocation of abdominal delivery purely on grounds of advanced age should be discouraged. Unwarranted intervention in labour based on age alone is not acceptable. The aim of management is to improve perinatal outcome without compromising health and well-being of the mother.

An interesting aspect of this study is that a statistically significant Macrosomia was present in mature gravida in our study. This finding in our study could be because mature women are well settle in their married life, more affluent, having a high body mass index and attend antenatal clinics regularly. In contras, According to the studies and researches of Goldman et al. (2005)[23], it was reported that there would be a statistically significant relation between low birth weight and the age of over 40. They understood that mothers above 35 years would usually bear a term infant at the same weight of the control group. Studies of low birth weight babies are contradictory. For example, Ndiayo could not find any relationship (Ndiaye et al., 1998)[24]. Large studies are needed to establish the exact association between advance maternal age and infant birth weight.

Maternal and Perinatal morbidity increases as a function of maternal age. Age alone cannot be held responsible for this observation. Associated risk factors such as hypertension and diabetes are seen more frequently in the older gravida and account for increased incidences of placental abruption, and (pre) eclamptic disease, all of them being associated with a higher risk for (emergency) Caesarean section. In turn, the latter is associated with a higher risk for haemorrhage and infectious complications. Most studies report an age-related increase in maternal morbidity especially among black, poor women aged >40 years [25]. Women >35 years of age also have a higher risk for complications during their pregnancy.

It is the severity of disease process not the age that is responsible for increase perinatal mortality rate[24]. In large retrospective studies it was shown that PMR in pregnant women >40 years of age is slightly higher than in younger women, when chronic diseases e.g. hypertension and diabetes were excluded [25]. This can partly be explained by the age-related increase in confounders such as congenital anomalies.

CONCLUSION

Mature gravida are at an increased risk for spontaneous abortion, gestational hypertension, gestational diabetes, operative vaginal deliver and abdominal delivery and macrosomia. The perinatal mortality rate is low but caesarean section rate is high in our study.

Early booking, close supervision in antenatal and intrapartum period and appropriately timed obstetric intervention are essential for an optimum outcome in management of the mature gravida. Mature gravidae should be educated at the community level, guided, and explained about the necessity of availing of the facilities of antenatal Care, safe delivery, and quality of newborn care.

REFERENCES

1. Kirz DS, Dorchester W. Freeman RK: Advanced maternal age: The mature gravida. Am J Obstet Gynecol 1985;152:7-12.

2. Webster's New Collegiate Dictionary, Springfield, Massachusetts: G&C Merriam Company, 1979:704.
3. Breart G. Delayed childbearing. Eur J Obstet Gynecol Reprod Biol 1997;75:71-3
4. Cnattingius S, Stephansson O. The epidemiology of stillbirth. Semin Perinatol 2002;26:25-30.
5. Heffner LJ. Advanced maternal age — How old is too old? N Engl J Med 2004;351:1927-9.
6. Joseph KS, Allen A, Dodds L, et al. The perinatal effects of delayed childbearing. Obstet Gynecol 2005;105:1410-8.
7. Cleary-Goldman J, Malone FD, Vidaver J, et al. Impact of maternal age on obstetric outcome. Obstet Gynecol 2005;105:983-90.
8. Saftlas AF, Olson DR, Franks AL, et al. Epidemiology of preeclampsia and eclampsia in the United States, 1979–1986. Am J Obstet Gynecol 1990;163:460-5.
9. Jolly M, Sebire N, Harris J, et al. The risks associated with pregnancy in women aged 35 years or older. Hum Reprod 2000;15:2433-7.
10. Conde-Agudelo A, Belizan JM, Diaz-Rossello JL. Epidemiology of fetal death in Latin America. Acta Obstet Gynecol Scand 2000;79:371-8.
11. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC, Wenstrom KD (2005). Diabetes. In: Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC, Wenstrom KD Williams Obstetrics, 22nd edition. New York: McGraw-Hill, pp. 1169–1187.
12. Newcomb W.W Rodriguez M. and Johanson J.W.C. Reproduction in the older gravida. A Literature review. J. Reprod. Med. 1991;36:839-845.
13. K T Tan, K H Tan. Pregnancy and delivery in primigravidae aged 35 and over. SINGAPORE MED J 1994; Vol 35: 495-501.
14. Henry L. Some data on natural fertility. Eugenices Quart 1961; 8:81-91.
15. Roghmann K, Doberty R. Reassurance through prenatal diagnosis and willingness to bear child after age 35. Am J Public Health 1983; 73:760-4.
16. Prysak, M., Lorenz, R.P. and Kisly, A. (1995) Pregnancy outcome in nulliparous women 35 years and older. Obstet. Gynecol., **85**, 65–70.
17. Tysoe FW. The effect of age on outcome of pregnancy. Trans Pacif Coast Obstet Gynaecol Soc 1979; 38:8-15
18. (Mestman JH Anderson GV, Smale M.A possible explanation for falsely positive hydrocortisone GTT during pregnancy; Diabetes 1964; 13;383-6.)
19. Potterson M. The etiology and outcome of abruptio placenta. Acta Obstet Gynaecol Scand 1979; 58:31-5.
20. Walters E. Pregnancy and labour experiences of elderly primiparas. Am J Am J Obstet Gynecol 1950;59:296-8.
21. Kessler I, Lancet M, Borenstein R, Steinmetz A. The problem of the older primipara. Obstet Gynecol 1980;56:165-9.
22. Berkowitz GS, Skovron ML, Lapinski RH. Delayed childbearing and the outcome of pregnancy. N Engl J Med 1990;322:659-64.
23. Goldman JC, Malone FD, Vidaver J, Ball RH, Anyberg D, Comstock C (2005). Impact of maternal Age on obstetric outcome. Am. J. Obstet. Gynecol., 105(5): 983-989.
24. Ndiaye, O., M. Ba, A. Diack-Mbaye, L. Diouf, H.D. Sow, A. Sylla, N. Kuakuvi and M. Fall, 1998. Risk factors for low birth weight: influence of maternal age parity, gestational age, nutritional status and maternal pathology. Dakar-Mad., 43(2): 188-190.
25. Grimes DA, Pross GK. Pregnancy outcomes in black women aged 35 and over. Obstet Gynecol 1981; 58:614-20.