The Effect Of Maternal Age On The Progress Of Vaginal Delivery

Muna kasim mahmood*; FICS, Iqbal Qassim Jaber **; FICS

*College of medicine, Karbala University, Karbala; Iraq
**Senior in obstetric and gynecology in maternity hospital in Karbala city

Abstract

Background and Objective: teenage pregnancy is defined as maternal age less than 20 years of age,while advanced maternal age is defined as maternal age more than 35 years[1]. In this study we want to determine whether there is a continuous effect of maternal age on the progress of vaginal delivery in a selected low risk pregnancy with spontanuous term labour.
Materials and methods:- prospective study, 100 low risk pregnancy with spontanuous term labour. Female were divided into two groups, the first group were the maternal age equal to or less than 20 years (60 cases) and the second group were the maternal age more than 20 years of age (40 cases). There progress of vaginal delivery were monitored and the out come of delivery were recorded.These groups then analysed according to maternal age for the progress of labour to vaginal, instrumental or caesarean section using SPSS variant 10.
Results:- The incidence of vaginal delivery was 90% for those maternal age equal to or less than 20 years and 87.5% for those maternal age more than 20 years of age (P value 0.494).
Conclusion:- There is minimal effect of maternal age on the progress of vaginal delivery in selected low risk term pregnancy with spontaneous labour which is not statistically significant.

الخلاصه

المقدمه وهدف الدراسه: الامهات المراهقات هن الامهات الاتي اعمارهن اما 20 سنه او اقل, اما الامهات المتقدمات في العمر اذا تجاوزت اعمارهن 35 سنه. والهدف من هذه الدراسه هو لمعرفة تأثير عمر المرأه الحامل على تقدم الولاده الطبيعيه في مجموعه محدده من الحوامل الاتي يخضعن لمواصفات محدده.
المرضى وطرق العمل: اشترك في هذه الدراسه 100 امرأه حامل في الشهر التاسع أثناء الولاده . تم تقسيم الحوامل الى قسمين,القسم الاول هن الحوامل اللاتي اعمارهن اقل او يساوي 20 سنه (60حامل), اما القسم الثاني هن الحوامل اللاتي اعمارهن اكثر من 20 سنه(40حامل). ثم تمت مراقبة تقدم الولاده الطبيعيه في كلا القسمين و حساب نسب الولاده الطبيعيه, الولاده بواسطة العمليه القيصريه ,أستخدام الملقط او حدوث المضاعفات للمراه او الطفل.
النتائج: 90% من الحوامل اللاتي اعمارهن اقل او يساوي 20 سنه ولدن ولاده طبيعيه و 10% احتجن عمليه قيصريه. 87.5% من الامهات ولدن ولاده طبيعيه و 12.5% احتجن عمليه قيصريه بالنسبه للامهات اللاتي اعمارهن اكثر من 20 سنه.

Introduction

Labour is a physiological proscess that permits a series of extensive physiological changes in the mother to allow for the delivery of her fetus through the birth canal There are many factors that can affect the progress of vaginal delivery and these factors may be fetal such as (fetal macrosomia, malposition, malpresentation or fetal growth restriction) or maternal such as (maternal disease such as hypertension, diabetus, heart disease, contracted maternal pelvis or pelvic tumor). Other factors that may affect the progress of vaginal delivery is the maternal age. Some studies had demonstrated that women older than 20 years are more likely to be delivered by

caesarean section more than younger age group [2]. Other studies regard teenage mothers are at increase risk of instrumental delivery and caesarean section[3]. The purpose of this study is to evaluate the effect of maternal age on the progress of vaginal delivery in a sample of low risk pregnant women for whom we have detailed antenatal and delivery information. Since the cases are of low risk group, comparison between different age group can provide a resonably clear picture of whether maternal age can affect the progress of vaginal delivery or not.

Materials and methods

From May 2011 to Desember 2011, 100 pregnant women in labour from maternity hospital in Karbala city were selected based on inclusion criteria which include;

1- term pregnancy (preterm and postterm were excluded).
2- Single and cephalic fetus (breech and twin pregnancy was excluded).
3- Pregnant female who had at least one previous delivery (primigravida and grand multiparous were excluded).
4- Spontaneous onset of labour (not induced labour).
5- No antenatal maternal or fetal risks such as maternal (hypertension, diabetus, smoking, antepartum hemorrhage, obesity) or fetal (intrauterine growth restriction or macrosomic fetus).
6- Cases with previous caesarean section were excluded.

Baseline data were recorded with the following questionnaire.

- female age.
- Female height.
- Female weight.
- Calculation of maternal BMI.
- Femal parity.
- Weeks of gestation.
- Clinical estimation of fetal weight.
- Mode of delivery (vaginal, caesarean or instrumental).
- Weight of the neoborn.
- APGAR score of the neoborn.
- Postnatal maternal complications.
- Early neonatal complications.

Table 1. Demographic data of the study group

Charecteristic		mean ± SD
Maternal age (years)		21.9 ± 0.62
Maternal height (cm)		161.9 ± 5.7
Maternal weight (kg)		71.1 ± 7.2
Maternal BMI (kg / m^2)		27.09 ± 1.8
parity		1.77 ± 1.06
Weeks of gestation		38.7 ± 0.88
Weight of the neoborn (kg)		3.34 ± 0.34
Mode of delivery	Vaginal (no.)	89
	Caesarean section (no.)	11
	Instrumental (no.)	-
Postpartum maternal complications (no.)		3
Early neonatal complications (no.)		5

Follow up of these females was done during delivery and post delivery period and neonatal outcome were recoded.

All females with complete follow up information were divided into two groups;

1- maternal age ≤ 20 years.
2- Maternal age > 20 years.

The outcome of the progress of vaginal delivery is compared between the two groups.

Statistical analysis was performed to evaluate the effect of maternal age on progress of vaginal delivery. All analyses were performed with SPSS version 10.

Result

* Of the 100 pregnant females who delivered in the study period and who satisfied the inclusion criteria. 60 women her ages were equal to or less than 20 years and 40 women were more than 20 years.The mean age for the first group was 17.87, while the mean age for the second group was 28.08 years(P value 0.0532).

* The mean BMI for the first group was 27.35 kg/m^2 and was 26.94 kg/m^2 for the second group (P value 0.285).

* The mean parity for the first group was 1.7 and for the second group was 2.47 (P value 0.09).

* The mean weeks of gestation was 38.61 for the first group and for the second group was 38.75 (P value 0.452).

* The mean weight of the babies for the first group was 3.326 kg and was 3.343 kg for the second group (P value 0.821).

* The incidence of delivery by caesarean section was 10% for the first group and 12.5% for the second group (P value 0.494).

The indication of caesarean section were for

1- suspected fetal distress based on abnormal or suspicious electronic fetal heart monitor tracing.
2- arrest of cervical dilatation or arrest of desend.

Table 2. Comparison of maternal charecteristics and pregnancy out come between younger(≤ 20 years) and older(> 20 years) mothers.

Maternal charecteristic		Age equal to or less than 20 (mean ± SD) (no.60)	Age more than 20 (mean ± SD) (no.40)	Statistical significance
Age (years)		17.87±1.49	28.08±5.53	0.0532
Weight (kg)		70.35±6.88	72.42±7.63	0.187
Height (cm)		161.66±5.9	162.42±5.55	0.523
BMI (kg/m^2)		27.35 ± 2.06	26.94 ± 1.659	0.285
Parity		1.7±0.72	2.47±1.1	0.09
Weeks of gestation		38.61 ± 0.871	38.75 ± 0.890	0.452
weight of baby after delivery (kg)		3.326 ± 0.390	3.343 ± 0.325	0.821
Mode of delivery	Vaginal(no.)	54 (90%)	35 (87.5%)	0.494
	Caesarean(no.)	6 (10%)	5 (12.5%)	
	Instrumental(no.)	-	-	
Postpartum maternal complications(no.)		1 (1.6%)	2 (5%)	
Early neonatal complications(no.)		4 (6.67%)	1 (2.5%)	

* Maternal outcome; the incidence of maternal complications was 1.6% for the first group and 5% for the second group (primary Post partum hemorrhage that usually respond to pharmacological treatment).

* Neonatal outcome; most neonates are healthy with about 8,10 APGAR score at 1 and 5 minutes respectively, the incidence of neonatal admission to neonatal care unite was 6.67% for the first group and 2.5% for the second group (the neonates that admitted to NCU were the product of

caesarean section for suspected fetal distress).

Discussion

Study done in Washington state from 1987-1990 found that the incidence of caesarean section for those aged 15-19 years is 12.9% for primigravida female and 3.2% for multigravida female , while the incidence of caesarean section for those aged 20-24 years was 21.4% for primigravida and 5.8% for those who are multiparous female. For those who are 30 year or more , the incidence of caesarean section was 30% for primigravida and 7.8% for those who are multiparous female.[4]

Another study done in California between 1992-1998 for low risk term pregnancy found that the incidence of caesarean section was 5.9% for those less than 20 years , 6% for those between 20-25 years , 9.1% for those between 25-30 years and 12.7% for those more than 30 years.[5]

A retrospective study done in Hong Kong found that the incidence of caesarean section for those less than 20 years was 13% compared to 36% for those more than 20 years.[6]

In a prospective descriptive study in 2008, 2940 pregnant females referring to Bandar Abbass shariaty maternity hospital found that the incidence of caesarean section was 21% for those female less than 35 years age and 31% for those between 35-39 year and 40.5% for those more than 40 years (P value 0.001) and the incidence of operative vaginal delivery was 7.5% for those less than 35 years, 7.1% for those 35-39 years and 6.3% for those more than 40 years of age.[1] The finding from this study suggest that teenage child bearing is advantageous regarding the progress of vaginal delivery and lower incidence of caesarean section compared to mothers more than 20 years of age.

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