Elmer Press

Original Article

J Clin Gynecol Obstet • 2012;1(1):4-9

Is There a Relation Between Maternal Age and Preferred Mode of Delivery?

Ingrid Kowalcek[a, b], Franziska Hainer[a]

Abstract

Background: The aim of this study is investigate how pregnant women feel about caesarean section and natural birth and whether a relation between maternal ages and preferred mode of delivery exists.

Methods: The consecutive sampling consisted of 534 pregnant women presenting themselves for prenatal diagnosis at the Clinic of Obstetrics and Gynaecology of the University Hospital Schleswig Holstein, Campus Lueck (Germany). The pregnant women marke their wishes in a questionnaire on birth expectations in a five point Likert scale in a standardized questionnaire. Socio-demographic data were collected separately. Besides the descriptive statistics, an inferential (t-test) statistics method was implemented to assess the age groups, using SPSS 15.0. The level of significance was 5 %.

Results: Women favour a natural birth and place high importance on the criteria physiology, birth experience and personal support. Characteristics of the caesarean section viewed negatively include surgery and pain. Pregnant women of advanced age (≥ 35 years) tend to view caesarean section slightly more positive but there is insufficient evidence to support that their decisions diverge from younger women's views.

Conclusions: The rise in caesarean section rates cannot be attributed to the patients' wishes. Although special risks were found in various studies for mothers of 35 years or older, they still prefer to give birth naturally. In terms of patient autonomy, obstetricians should respect women's choice for vaginal delivery, and avoid medical intervention if clinically possible.

Keywords: Mode of delivery; Vaginal delivery; Caesarean section; Maternal age

Introduction

The population trend in delaying childbirth has various influences on obstetric practice and pregnancy outcome. Many studies have demonstrated correlation between advanced maternal age and specific obstetric risks. Perinatal outcomes differ with maternal age concerning gestational age, birth weight, prematurity, low birth weight, small-for-gestation-age infants, fetal distress and perinatal morbidity and mortality. Increasing maternal age is independently associated with specific adverse outcomes [1]. For women over 35 years with their first pregnancy and for women with two pregnancies at the age of 40 maternal ages is risk factor for gestational diabetes, hypertension and gestosis [2]. In an Austrian study 10765 women aged 17 to 49 years were analysed [3]. For mothers older than 35 year the highest rate of low weight newborns (3.7%) and the highest rate of macrosomic newborns (> 4.000 g) were found.

Changes in maternal age and specific obstetric risk factors, as well as changes in decision-making concerning mode of delivery, play important roles in actual development of medicalisation in childbirth practice. Rise in primary caesarean rates coincides with a trend of increasing average maternal age. Various studies illustrate increased likelihood of caesarean birth among women of advanced maternal age [4]. An American study [5] shows that caesarean delivery rates increased with advancing maternal age (< 25 years 11.6%; > 40 years 43.1%). Older women were more likely have caesarean delivery without labour (< 25 years 3.6%; > 40 years 21.1%). Advances maternal age higher risk for caesarean delivery in part because they are more likely to have caesarean delivery without labour. Regarding the mode of delivery in a German investigation 77.1% (> 22 years) and 53.1 % (> 32 years) experienced spontaneous delivery, 14.5

Manuscript accepted for publication October 21, 2011

[a]Institute of Women Health, Brahmsstrasse 10, 23556 Lubeck, Germany
[b]Corresponding author: Kowalcek I. Email: Kowalcek@t-online.de

doi:10.4021/jcgo3e

Table 1. Questionnaire on Birth Expectations [8] Item Characterizing

Argument in favour of vaginal delivery	**Argument in favour of caesarean**
Birth experience	Delivery at desired date
Natural event	"Aesthetics" during childbirth
Mother-child bonding	Pain control
Presence of supporting person	Safety for the mother
Safety for the mother	Safety for the baby
Safety for the baby	Presence of supporting person
	Maintaining body functions intact
Argument against vaginal delivery	**Argument against caesarean**
Uncontrollable pain	Surgery
Somatic late effects	Post-operative pain
Negative influence on sexuality	Loss of control
Impairment of baby's health	Impairment of baby's health
Loss of control	Late effects due surgery
"Un-aesthetics" during childbirth	Reduced mother-child bonding

% (< 22 years) and 32.3 % (> 32 years) had a caesarean section [6]. A British study [7] shows that increasing maternal age was associated with a longer duration of labour (0.49 h longer for a five years increase in age) and an increased risk of operative vaginal birth. Over the period from 1980 to 2005 caesarean delivery rate among nulliparious women more than double and proportion of women aged 30 - 34 years increased threefold, proportion aged 35 - 39 years increased sevenfold and proportion aged > 40 years increased tenfold. Similar associations were observed in multiparous women. Authors discussed reduced spontaneous activity and increased likelihood of multiphasic spontaneous myometrial contractions in vitro as contributing reasons for problematic vaginal birth ad advanced maternal age.

Across the developed countries the average maternal age continues to rise. The development of caesarean section rate is parallel to increasing rate of pregnancy at advanced maternal age. Many reviews have evaluated influence of advanced maternal age on pregnancy and birth risks. In the case of pregnant women with advanced age often performed a cesarean section. Although many reasons as mentioned above contribute to assumption that women of advanced age might benefit from caesarean delivery, there is a lack of information concerning women's personal preferences. The aim of the study is to investigate how pregnant women feel about caesarean section and vaginal birth and whether a relation between maternal ages and preferred mode of delivery exists.

Methods

Sample

The consecutive sampling was consisted 534 pregnant women presenting themselves for prenatal diagnosis at the Clinic of Obstetrics and Gynaecology of the University Hospital

Table 2. Items With Significant Difference Between the Age Groups (t-test) Questionnaire on Birth Expectations [8]

Item	Mean values		Significance (P-value)
	Group 1 (< 35 ys)	Group 2 (≥ 35 ys)	
Negative vaginal birth			
Impairment baby	1.89	1.43	0.001*
Negative vaginal birth			
Un-aesthetics	0.92	0.65	0.017*
Positive vaginal birth			
Safety baby	2.79	2.49	0.006*
Positive vaginal birth			
Mother-child bonding	3.02	2.70	0.007*
Negative Caesarean			
Mother-child bonding	2.04	1.75	0.050*
Positive Caesarean			
Desired date	1.10	0.84	0.050*

Schleswig Holstein, Campus Lubeck, Germany. The pregnant women make their wishes in an investigator-developed standardized Questionnaire on Birth Expectations. Sociodemographic data were collected separately.

Material

The two-part questionnaire includes demographic information, details of previous births and current pregnancy. Part one asked about age, material status, and level of education, occupation and antenatal care. Furthermore information about the participant previous childbirths, including parity, obstetric history and mode o delivery was gathered.

The Questionnaire on Birth Expectations formed the second part. It contained possible advantages and disadvantages of the two modes of delivery, vaginal birth and caesarean section. All items are shown in Table 1. Pregnant women were asked to rate how agree with itemised arguments on a five point Likert scale, ranging from (0) "doesn't apply to me al all" to (4) complete.

Statistical analyses

All data were initially collected in a patient's data file and analysed by the Statistical Package for the Social Science (release 15.0 SPSS Inc., Chicago, Il, USA). Variables were summarised by their mean value and median. Standard deviation, mean rage as well as minimal and maximal values were evaluated. Besides descriptive demonstration of the results inferential statistics were used to compare results between the two age groups. The homogeneity of variance of the normally distributed data was analysed by the Levene-Test. Subsequently, the Student test hom or het was used in order to compare the mean ranges depending on the level of variance. The typical level of significance of 5% was implemented for statistical tests.

Results

Women's views on vaginal birth and caesarean section:

Table 3. Positive Items With no Significant Difference Between the Age Groups (t-test) Questionnaire on Birth Expectations [8]

Item	Mean values		Significance (P-value)
	Group 1 (< 35 ys)	Group 2 (≥ 35 ys)	
Positive vaginal birth			
Birth experience	3.10	3.02	0.427
Positive vaginal birth			
Natural event	3.43	3.34	0.360
Positive vaginal birth			
Supporting person	3.31	3.21	0.396
Positive vaginal birth			
Safety mother	2.75	2.58	0.137
Positive Caesarean			
Aesthetics	0.77	0.67	0.330
Positive Caesarean			
Pain control	1.76	1.68	0.082
Positive Caesarean			
Safety mother	2.28	2.46	0.333
Positive Caesarean			
Safety baby	2.47	2.55	0.538
Positive Caesarean			
Supporting person	1.89	1.50	0.096
Positive Caesarean			
Body function	1.27	1.05	0.089

women favour vaginal birth and place high importance on the criteria physiology, active birth experience and personal assistance. Characteristics of the caesarean section viewed negatively include surgery and pain.

Preferred type of birth among women of advanced age: the pregnant women included in our study are between 16 and 44 year old the average age is 32.8 years. 55.8% (n = 298) are less than 35 years old, 43.8% (n = 234) are 35 years or older. In order to estimate the estimate the 35 years or older women's views on the different modes of delivery, two age groups are created. Group one included women aged < 35 years, group two women of ≥ 35 years. The association between birth mode preference and maternal age is compared by analysing the coincidences and differences in judging the characterising items of the types of birth. The following six of 44 items (13.6%) show significantly different judgment between women < 35 years and women ≥ 35 years: impairment of the baby is an argument against caesarean section, safety for the baby is an argument in favour of vaginal delivery, mother-child bonding is an argument for vaginal delivery, "aesthetics" during childbirth is an argument for caesarean section. The two-groups´ difference in establishing priorities when judging the mode of delivery is assessed by the difference in the items mean values. The maximal difference of 0.46 is found for "impairment of baby's health": group one women aged < 35 years expression of the item are

Table 4. Negative Items With no Significant Difference Between the Age Groups (t-test) Questionnaire on Birth Expectations [8]

Item	Mean values		Significance (P-value)
	Group 1 (< 35 ys)	Group 2 (≥ 35 ys)	
Negative vaginal birth Pain	1.93	2.02	0.57
Negative vaginal birth Late effects mother	1.69	1.74	0.69
Negative vaginal birth Sexuality	1.36	1.24	0.36
Negative vaginal birth Late effects baby	1.76	1.86	0.46
Negative vaginal birth Loss of control	1.89	1.81	0.58
Negative Caesarean Surgery	2.68	2.68	0.89
Negative Caesarean Postoperative pain	2.44	2.47	0.87
Negative Caesarean Loss of control	2.08	1.99	0.579
Negative Caesarean Late effects	2.11	1.92	0.184

1.89; groups two women ≥ 35 years expression of the item are 1.43. The difference value for the criterion of "mother-child bond" and "safety of the child" between the groups are 0.32. The minimal difference between the two groups is 0.26 for postive caesarean: desired date. Table 2 contains the complete data of significantly differently assessed items in relation to maternal age. The complete data of items which do not show relevant evaluation differences are given in Tables 3 and 4.

Discussion

We found that women of advanced maternal age place significantly higher importance on the criteria safety on the bay and the mother child bonding than younger pregnant women. This might show womens ≥ 35 years additional fears caused by their special obstetric risks. An american study [8] showed that among advances maternal age, there are a higher incidence of previous abdominal operations, caecarean sections, previous perinatal death, infertility and alcohol abuse but relatively few have suffered from comorbid conditions or obesity. Most are higher socioeconomic status and have private physicians. Women ≥ 35 years tend to prenatal care and early prenatal diagnosis with an implementation of an aminocentese. The have a higher risk of gestational glucose intolerance, hypertension and hospitalisation during their pregnancy, 45% have a caesarean delivery and their hospital stays are longer. Their rates of vertex presentation, prematuritiy, postmaturity, macrosomia induced or augemented laor are similar to those of younger women. Perinaltal mortality was lower for women aged ≥ 35 years. This study demonstrates that women over 35 years are not at greater risk of adverse pregnancy outcomes if the are ared for early and arefully. It seens, however that mor intensive care and preparation my lead to more concerns about the safety of mode of

delivery.

Nevertheless, out of 44 items only four showes signifikantoy differently preferences. The maja part consisted in items describing the women´s preferred type of birth with are not significantly associated with different judgment in relation to maternal age. This leads to the assumption that women prefer to have vaginal delivery regardless of their age. The higher rate of caesarean sections among women age ≥ 35 year is not linked with more caesarean sections on demand. The resasons seem rather ot be found by analsysing the medical complications during pregnancy and giving birth, but this work shows that they can cope with it.

Limitations of the study

There are, however, significant methodological limitations to the study. As stated in the question was aimed to investigate aim to provide an inventory of aspects that are being presumed that they are closely related with the wishes of the mode of delivery. The reliability and validity of Questionnaire on birth expectations should be reviewed. Our data allowed a hypothesis-like integration of the data obtained material. More hypothesis-driven studies to ensure the results are inferential statistics necessary.

Conclusion

The rise in caesarean section rates cannot be attributed to the patients´wishes. Although special risks were found in various studies for mothers of 35 years or older, they still prefer vaginal delivery. In terms of patient autonomy, obstetricians should respect the women`s choice for vaginal delivery, avoiding medical intervention if clinically possible. Especially while counselling pregnant women ≥ 35 years, special effort should be made to reduce their concerns and fears caused by a higher obstetric risk level. Further investigation is needed to evaluate the relationship between advanced materal age and mode of delivery as some contributing reasing remain unclear.

References

1. Montan S. Increased risk in the elderly parturient. Curr Opin Obstet Gynecol. 2007;19(2):110-112.
2. Joseph KS, Young DC, Dodds L, O'Connell CM, Allen VM, Chandra S, Allen AC. Changes in maternal characteristics and obstetric practice and recent increases in primary cesarean delivery. Obstet Gynecol. 2003;102(4):791-800.
3. Kirchengast S, Hartmann B. Advanced maternal age is not only associated with newborn somatometrics but also with the mode of delivery. Ann Hum Biol. 2003;30(1):1-12.
4. Bayrampour H, Heaman M. Advanced maternal age and the risk of cesarean birth: a systematic review. Birth. 2010;37(3):219-226.
5. Ecker JL, Chen KT, Cohen AP, Riley LE, Lieberman ES. Increased risk of cesarean delivery with advancing maternal age: indications and associated factors in nulliparous women. Am J Obstet Gynecol. 2001;185(4):883-887.
6. Voigt M, Rochow N, Zygmunt M, Straube S, Schneider KT, Briese V. Risks of pregnancy and birth, birth presentation, and mode of delivery in relation to the age of primiparous women. Z Geburtshilfe Neonatol. 2008;212(6):206-210.
7. Smith GC, Cordeaux Y, White IR, Pasupathy D, Missfelder-Lobos H, Pell JP, Charnock-Jones DS, et al. The effect of delaying childbirth on primary cesarean section rates. PLoS Med. 2008;5(7):e144.
8. Ales KL, Druzin ML, Santini DL. Impact of advanced maternal age on the outcome of pregnancy. Surg Gynecol Obstet. 1990;171(3):209-216.