

Obstetric outcome in adolescence: a single centre experience over seven years

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Summary

Purpose of investigation: The aim of this study was to compare the obstetric outcome of adolescent pregnant women (aged ≤ 18) with the outcome of adult pregnant women who delivered in a tertiary university hospital. **Materials and Methods:** Delivery files from 2004 to 2011 were reviewed concerning age of the pregnant women, parity, gestational age, mode of delivery and birth weight of the neonates. **Results:** During the study period 119 (0.94%) out of 10,483 deliveries were performed in adolescent women. Caesarean section was the mode of delivery in 41 adolescent patients (34.45%), while the corresponding rate was 53.6% (5,556 cases) in adult pregnant women. The preterm labour rate in the adolescent group was 13.44% (16 cases) while in the adult group it was 21% (2,201 cases). The most frequent indication of caesarean section in the adults was previous caesarean section (21%). **Discussion:** In adolescent pregnancies the caesarean section rate was lower than in adult pregnancies. As far as the prevalent cause of caesarean section is concerned, it was repeat caesarean section for adults while in adolescents it was failure of labour to progress.

Key words: Adolescent; Obstetric outcome; Cesarean section; Vaginal delivery; Parity; Birth weight.

Introduction

It is considered that adolescent mothers are at increased risk of poor obstetric outcome due to the immaturity of their genital tract [1]. It is supported that adolescence may be associated with increased incidence of pregnancy complications such as preterm labour, intrauterine growth retardation and low birth weight resulting in increased caesarean section rates [2, 3]. Global differences in prenatal care programmes for teenage mothers and access to public or private hospitals with varying standards of obstetric management exist in developed and developing countries alike. Thus, conflicting data are reported in the literature regarding the obstetric outcome in adolescent mothers [4, 5]. The objective of this retrospective study was to present the obstetric outcome of pregnant women equal or younger than 18 years of age and compare it with an adult pregnant population (aged ≥ 19) who delivered in our tertiary department over a seven-year period. We also report the rate of preterm labour, the incidence of caesarean section and the most common indication for performing caesarean section in the two study groups.

Material and Methods

Medical records of 10,483 sequentially pregnant women who delivered in our single tertiary department from April 2004 to April 2011 were retrospectively reviewed. We classified them into two groups; the adolescent group was defined as teenage mothers ≤ 18 years of age and the adult group included mothers aged 19 years or older. Preterm delivery was defined as the birth of an infant before 37 weeks of gestation after premature rupture of membranes or preterm initiation of the active phase of labour with regular uterine contractions, at least three in 30 minutes, cervical effacement and dilatation.

All births in the study were conducted by the same team of experienced midwives in the labour ward of our department with the advice and support of trainees and under the supervision of senior obstetricians. As a routine, continuous electronic foetal monitoring was provided for intrapartum foetal surveillance to detect foetal distress. Administration of oxytocin was used for labour induction or augmentation of dysfunctional labour according to the published obstetric protocols [6, 7]. The most common indications for caesarean delivery in our department included previous caesarean section, arrest of dilation or descent, non-reassuring foetal status, multiple gestations, malpresentations and several maternal-foetal conditions [8]. Caesarean section, in cases of labour arrest owing to cessation or inadequate uterine contractions for at least two hours without cervical change, was indicated only after failure of oxytocin augmentation [9].

In addition, diagnosis of cephalopelvic disproportion was attempted to be excluded in cases with a prolonged second stage of labour. Finally, the decision for caesarean section was usually made in consultation with the pregnant woman after a thorough discussion of the potential risks and benefits of the procedure.

Results

From the total number of pregnant women (10,483), 119 pregnant adolescents were allocated to the first group (1.13%) and 10,364 pregnant adults (98.87%) to the second group during the study period. The mean age of teenage mothers was 15.93 ± 1.16 years old (range: 12-17) while in the adult group it was 29.90 ± 5.54 (range: 18-49).

In the former group, the vaginal delivery rate was 65.45% (78 adolescent mothers) while the corresponding rate in the latter group was 46.4% (4,808 adult mothers). Table 1 presents the indications for caesarean delivery in the teenage and adult groups.

The caesarean section rate among adolescent pregnant women was 34.45% (41 cases) while that for the adult pregnant women it was 53.6% (5556 cases). The major

Table 1. — *Indications for caesarean section.*

Indications	Adolescent group (n = 41)	Adult group (n = 5,556)
Preterm labour	16 (39.0%)	2201 (39.6%)
Multiple gestation		511 (9.2%)
Labour arrest	11 (27.4%)	427 (7.6%)
Fetal distress	3 (7.2%)	275 (4.9%)
Repeat caesarean section	2 (4.8%)	1167 (21%)
IUGR	1 (2.4%)	210 (3.8%)
Preeclampsia	2 (4.8%)	126 (2.2%)
Antepartum hemorrhage	1 (2.4%)	105 (1.8%)
Congenital malformations	1 (2.4%)	35 (0.6%)
Malpresentations		35 (0.6%)
Breech presentations	3 (7.2%)	30 (0.5%)
Fetal pathology		70 (1.0%)
Maternal pathology	1 (2.4%)	364 (6.5%)

Table 2. — *Comparison of parity, gestational age, mode of delivery and birth weight between the adolescent and adult group.*

	Adolescent group (n = 119)	Adult group (n = 10,364)	p value
Maternal age (\pm SD) years	15.93 \pm 1.16	31.71 \pm 6.08	< 0.0001
Primigravida	91 (76.47%)	4149 (40.03%)	< 0.0001
Gestational age	38.33 \pm 2.16	37.76 \pm 2.83	0.0286
Vaginal delivery	78 (65.55%)	4808 (46.40%)	< 0.0001
Caesarean section	41 (34.45%)	5556 (53.60%)	< 0.0001
Birth weight (\pm SD) g	2984.82 \pm 508.38	2996.21 \pm 690.51	0.8573

indication for caesarean delivery was labour arrest or prolongation of second stage of labour in the adolescent pregnant group (26.82%), while repeat caesarean section was the most frequent (21%) indication for caesarean delivery in the adult pregnant group.

Caesarean section for preterm labour (< 37 weeks) occurred in 16 out of 119 (13.44%), in the adolescent group while in the adults it occurred in 2,201 out of 10,483 pregnancies (21%).

Furthermore, birth weights of the infants of these mothers did not differ significantly, and the mean birth weight in the adolescent mothers was 2,984 g (range: 1550–4560 g) while in the adult group it was 2,996.21 g (range: 440–4930 g) (Table 2).

Discussion

The incidence of caesarean section in adolescent mothers was lower compared to adults. This finding might be attributed to the conservative strategy that most obstetricians or physicians tend to adopt in this specific subgroup of pregnant women [10, 11]. This attitude is based on the notion that caesarean section at an early age might limit the number of future births [5]. The incidence of caesarean section in both groups was higher than that observed in the last decade. This is consistent with what has been reported in developed countries [12].

In our study, the most common indication for caesarean section in adolescent mothers was labour arrest and

prolongation of second stage of labour, whereas the most common indication for caesarean section in adult mothers was history of previous caesarean section.

The classification of the indications of caesarean sections between labour arrest and prolongation of second stage of labour or cephalopelvic disproportion was a challenging task. The labour arrest for caesarean section was the second commonest indication in adolescent mothers while in adult mothers it was the fourth frequent cause.

The mean neonatal birthweight was 2,984 g in the teenagers while in the adults it was 2,996.21 g. In the relevant literature it has been suggested that the increased incidence of complications during labour in adolescent mothers younger than 18 years old is due to the immaturity of the female body and specifically of the bony pelvis [1]. However, such an observation is not confirmed by our findings. This could be attributed to the fact that the formation of the bony pelvis is completed as early as one year after menarche achieving 85% of its bone density [12, 13]. In that respect, it is unlikely that the pelvis of a teenage mother is not able to allow the vaginal delivery of a full term baby.

Furthermore, it has been observed in this study that the incidence of preterm labour in adolescent mothers is reduced compared to the incidence observed in adult mothers.

Since 1970 the fertility rate (number of livebirths per woman) has decreased throughout Europe and this is consistent with a reduction in the numbers of teenage pregnancies. The majority of the Western European countries have a low incidence of adolescent pregnancies which in Greece has been estimated to be around 10 per 1,000 births [14]. A possible explanation of this finding is the development and implementation of sexual awareness programmes and the widespread use of contraceptive measures.

Adolescent pregnancies constitute an important social problem and bear important consequences on the health of an adolescent mother and her newborn. Nevertheless, adequate perinatal care can significantly minimise the health risks of adolescent pregnancy and secure an uneventful antenatal course of pregnancy and delivery for the adolescent mother and her offspring.

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