Maternal-Fetal Risk Increase From 41 Weeks of Gestation

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OBJECTIVES: We aimed to determine the maternal-fetal outcomes in pregnancies who delivered from 41 weeks of gestation.

STUDY DESIGN: Obstetrics records of 619 singleton pregnants delivered at our institution were reviewed. 275 of patients who were at ≥ 41 weeks consisted of the study group. The control group was consisted of 344 of patients deliveried between 38 and 41 gestational weeks. The groups were compared on maternal datas, mode of delivery and perinatal outcomes.

RESULTS: There were 135/275 (49 %) nulliparous in the study group and 114/344 (33,13 %) nulliparous in the control group (p < 0,001). Oxytocin was given to 82,18 % and 43,89 % of the study and the control group respectively (p<0.001). Cesarean section for cephalopelvic disproportion was indicated in 48,11% of study group and 12,38 % of control group (p<0.001). Macrosomia (>4000 g) was 19,27% and 13,37% in the study and control group respectively (p=0.048).

CONCLUSIONS: Closer monitoring should commence and induction of labor should be considered in gestational week 41.

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Key Words: Post-term pregnancy, Perinatal outcomes

Introduction

Prolonged (postterm) pregnancy is defined as a pregnancy that continues to or beyond 42 weeks (294 d) from the first day of the last normal menstrual period or 14 days beyond the best obstetric estimate of the date of delivery (EDD).[1]

Postterm antenatal fetal surveillance has traditionally begun at 42 completed weeks of gestation. However recent data have shown that a significant percentage of cases of perinatal asphyxia occurs between 40 and 42 weeks of gestation.[2] Some studies[2,3,4] said that the pregnancy risks increase already from gestational week 41.

With this mind, in our study we aimed to evaluate the prenatal indicators for prolonged pregnancy and maternal-fetal outcomes beyond 41 weeks gestation.

Material and Methods

The study was designed to be a retrospective analyze in Fatih University Medical Faculty department of obstetrics and gynecology between 2003 and 2006. Singleton pregnants (n=619) who were followed up and delivered at our institution were reviewed. 275 of patients beyond 41 weeks consisted of the study group. The control group was consisted of 344 of patients who had had delivery between 38 and 41 gestational weeks. The groups were compared on maternal datas, mode of delivery and perinatal outcomes as Apgar scores, birthweight and frequency of admission to neonatal intensive care unit (NICU).

Data analysis was performed by using SPSS for Windows (version 11.5). Data were presented as mean±std.deviation. Comparison of continuous variables were made by using Student's t-test or Mann-Whitney-U test, and categorical comparisons were evaluated by Chi-square or Fisher's exact probability test. A p value of <0.05 was accepted as statistically significant.

Results

The records of 619 pregnant patients who had been followed up and gave birth in the Obstetrics and Gynecology Department of Fatih University Hospital were reviewed. 275 patients were diagnosed as ≥41 weeks by history and early examination. 344 patients were between 38 and 41 weeks of gestation. Nulliparity and pre-pregnancy body mass index (BMI) were significantly higher in the study group (Table 1).

Table 2 showed the mode of delivery. Oxytocin was given to 82,18 % and 43,89% of the study and the control group respectively (p<0.001). Cesarean section for cephalopelvic disproportion was indicated in 48,11 % of study group and 12,38 % of control group (p<0.001). Table 3 showed the neonatal outcomes. The mean birth weight was 3543,78± 400,13 study group and 3351,02±482,98 in control group

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(p=0.022). 19,27 % of the fetuses of the study group weighed >4000 g (p=0.048). Apgar score in 5th minute was 9,79±0,64 and 9,85±0,37 in study and control group (p=0.01) respectively (Table 3).

Table 1: Maternal Data

	Study group (>41 gestational weeks) (n=275)	Control group (38-41 gestational weeks) (n=344)	p
Gravidity	1,84 ± 1,11	2,30 ± 1,44	<0.001*
Parity	0,78 ± 0,97	1,04 ± 1,16	0.004*
Pre-pregnancy BMI (kg/m^2)	24,10 ± 4,07	23,39 ± 4,14	0.047*
Post -pregnancy BMI (kg/m^2)	29,79 ± 4,22	28,95 ± 4,27	0.025*
Gestational weight gain	14,74 ± 4,14	14,63 ± 4,36	0.760
Nulllipara (%)	135 (49)	114 (33,13)	< 0.001*

Data are presented as mean ± Standard deviation
** p < 0.05*

Table 2: Mode of Delivery

	Study group (>41 gestational weeks) (n=275)	Control group (38-41 gestational weeks) (n=344)	p
Induction of labor	226(82,18%)	151(43,89%)	<0.001*
Cesarean delivery	106(38,54%)	105(30,52%)	0.017*
Cephalopelvic disproportion	51(48,11%)	23(12,38%)	<0.001*
Intrapartum fetal distress	23(8,36%)	29(8,43%)	0.005*
Operative vaginal delivery	10(5,9%)	7(2,92%)	0.167
-Forceps	3(1,77%)	4(1,67%)	0.625
-Vaccumn	7(4,14%)	3(1,25%)	0.05

** p <0.05*

Table 3: Neonatal outcomes

	Study group (>41 gestational weeks) (n=275)	Control group (38-41 gestational weeks) (n=344)	p
Birthweight	3543,78±400,13	3351,02 ±482,98	0.022*
Macrosomia (>4000 g)	53(19,27%)	46(13,37%)	0.048*
Shoulder dystocia	4(1,45%)	7(2,03%)	0.168
Meconium stained fluid	39(14,18%)	20(5,8%)	<0.001*
Birth trauma	32(11,6%)	13(3,77%)	<0.001*
-Caput succadeum	29(10,54%)	6(1,74%)	<0.001*
-Cephal hematoma	2(0,72%)	4(1,16%)	0.562
-Fracture of clavicula	1(0,36%)	3(0,87%)	0.417
Apgar score 1st minute	8,63±0,84	8,69±0,76	0.347
Apgar score 5th minute	9,79± 0,64	9,85±0,37	0.01*
Frequency of admission to NICU	5(1,8%)	9(2,6%)	0.5

Data are presented as mean ± Standard deviation
** p < 0.05*

Discussion

Prolonged (postterm) pregnancy is defined as a pregnancy that continues to or beyond 42 weeks (294 d) from the first day of the last normal menstrual period or 14 days beyond the best obstetric estimate of the date of delivery (EDD).[1] The term 'postdates' is not well defined and as such is best avoided.[1]

In the United States, approximately 18% of all singleton pregnancies continue beyond 41 weeks, 10% (range, 3% to 14%) continue beyond 42 weeks and therefore postterm, and 4% (2% to 7%) continue beyond 43 completed weeks in the absence of obstetric intervention.[5] Recent studies have shown that the risks to the fetus and to the mother of continuing the pregnancy beyond the estimated date of delivery is greater than originally appreciated.[1] Patients whose gestational age extends beyond 41 to 42 weeks constitute approximately 10% of al pregnancies and experience an increased risk of perinatal death, intrapartum fetal heart rate (FHR) abnormalities, meconium staining, macrosomia and cesarian delivery.[6]

Postterm antenatal fetal surveillance has traditionally begun at 42 completed weeks of gestation. However recent data have shown that a significant percentage of cases of perinatal asphyxia occurs between 40 and 42 weeks of gestation.[2] In this study we aimed to research the prenatal risk indicators and perinatal outcomes of beyond 41 weeks gestations. Prenatal risk indicators such as nulliparity, pre-pregnancy BMI were found significantly higher than control group (Table 1). In a similar study WO Annette et al[7] found the risk of postterm delivery higher in women with a pre-pregnancy body mass index of 25 kg/m^2 or more and in nulliparous. We found an increased risk of perinatal and maternal complications in pregnancies who delivered beyond 41 weeks of gestation (Table 2 and 3).

In a study Bochner et al[2] suggested that starting antenatal testing at 41 weeks of gestation may result in decreased postterm perinatal mortality and morbidity as well as decreased incidence of intrapartum fetal distress. In an other study Nakling et al[3] said that the pregnancy risks increase already from gestational week 41 and thay suggested that the guidelines for management of post-term pregnancies should be revised. Caughey et al,[8] searched the maternal complications of pregnancy and found that complications increase beyond 40 weeks of gestation. In a retrospective analysis of 145,695 singleton births, before 41 weeks the stilbirth risk rose gradually. [4] By 41 weeks there was a substantial increase in the stillbirth risk in nulliparous wome.[4]

Accurate dating of pregnancy is critical to the diagnosis of postterm pregnancy. In our study, the gestational age was calculated from the ultrasound measurement before 12 weeks of gestation. In a small prospective randomized study Bennett et

al[9] demonstrated that routine first trimester ultrasound for pregnancy dating reduced the incidence of postterm pregnancy from 13% to 5% when compared with second trimester ultrasound dating.

To conclude our findings suggest that maternal-fetal risks increase from 41 weeks and starting antenatal testing at 41 weeks of gestation may decrease the complications. Closer monitoring should commence and induction of labor should be considered in gestational week 41.

Further studies are needed for management of post-term pregnancies and what is designated as post-term pregnancy needs to be readdressed.

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