

## Comparative study of outcome of Postdated Pregnancy of Primaegravida and Multigravida Patients.

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### Abstract :

**Background :** Postdated pregnancy is a high risk pregnancy in obstetric situation because the perinatal morbidity and mortality exceed that of term pregnancies. According to the definition provided by the WHO and International Federations of Obstetrics and Gynaecology, a prolonged pregnancy is one that exceeds 294 days or 42 weeks from the first day of last menstrual period and postdated pregnancy is a condition which has passed beyond the expected date of delivery.

**Objectives :** To reduce the maternal and perinatal morbidity and mortality and to reduce the incidence of operative delivery in primigravida and multigravida patients in post dated pregnancy.

**Materials and methods :** The study was carried out from January to June, 2012 in the department of Obstetrics and Gynaecology, Dhaka National Medical Institute Hospital (DNMIH) Dhaka. Out of 206 women with postdated pregnancy, admitted during the study period in the obstetric ward of DNMIH, 80 women who fulfilled inclusion criteria, constituted the study population.

**Results :** In the present study out of 80 women with postdated pregnancy, 42(52.5%) were primaegravida and 38(47.5%) were multigravida. All the women of primaegravida group belonged to age group <30 yrs 42(100%) compared to 26(68.4%) multigravida. In this study, significantly more multigravida achieved normal vaginal delivery (19% primaegravida and 47.4% multigravida). Higher number of primaegravida (81%) delivered by LUCS compared to multigravida (47.4%) Postdated pregnancy did not affect significantly on the fetal weight between primaegravida and multigravida group (mean SD 2.93± 0.31 vs. 3.01±0.40 kg). However Apgar score was significantly lower in multigravida group (mean±SD 6.61±1.05) compared to primaegravida group (mean SD 7.19± 1.10). Maternal complications were higher among primaegravida compared to multigravida. In the present study, there was no neonatal or maternal death.

**Key words :** Postdated pregnancy, primigravida and multigravida, maternal and foetal outcome

### Introduction :

Postdated pregnancy is a condition which has passed beyond the expected date of delivery, that is more than 40 weeks is called postdated pregnancy. An intact fetal pituitary and adrenal axis appears to be necessary as evidenced by the tendency for anencephalic fetuses to exhibit prolonged gestation, just as do hypophysectomized sheep<sup>1</sup>. Approximately 30% of post mature fetuses will die in the antenatal period, 50% will die as a result of intrapartum

asphyxia and 20% will die in the early neonatal period as a result of meconium aspiration. Incidence of postdated pregnancy is about 3 to 14 percent of all gestations. The causes of postdated births are unknown, but post-mature births are more likely when the mother has experienced a previous post-mature birth. When there is a miscalculation, the baby could be delivered before or after the expected due date. Postdated births can also be attributed to irregular menstrual cycles. Some postdated pregnancies are because the mother is

not certain of her last period, so in reality the baby is not technically postdated. In fact, in 1976, Boyce et al<sup>2</sup> published a series of articles suggesting that 70% of post-term gestations, as judged by the menstrual age, were, in fact, of normal duration if the true ovulatory age were considered. However in most first world countries where gestation is measured by ultrasound scan technology. Whenever there is any significant doubt about the validity of menstrual dating, ultrasound examination should be performed. Crown-rump length measurement in the first trimester of pregnancy provides an extremely accurate determination of gestational age. Robinson et al<sup>3</sup> in 1975, demonstrated that gestational age could be estimated to  $\pm 2.7$  days with 95% confidence.

The non-stress test has become widely accepted method of fetal well being. In 1980, Manning et al<sup>4</sup> first reported on the use of the biophysical profile as a tool for assessment of fetal well-being. Detection of meconium has been considered to be useful for identifying patients at risk of true post-maturity syndrome. Maternal and fetal morbidity and mortality appear to follow two distinct patterns. The first pattern of morbidity and/or mortality involves fetuses their excessive size become susceptible to the effect of prolonged labour, increased risk of amniotic fluid infection and increased incidence of operative delivery or traumatic delivery. The second pattern of morbidity and /or mortality is subsequent to placental insufficiency, be it gradual or acute which may lead to intrauterine asphyxia leading to antenatal stillbirth or fetal distress in labour.

#### Methods and materials :

This prospective study was carried out in the department of Obstetrics and Gynaecology, Dhaka National Medical Institute Hospital (DNMIH) Dhaka from January to June, 2012. Out of 206 women with postdated pregnancy, admitted during the study period in the obstetric ward of DNMIH, 80 women who fulfilled inclusion criteria, constituted the study population.

#### Inclusion criteria :

- Women having regular menstrual cycle.
- Women who were confirmed about their last menstrual period by ultrasonography.
- Pregnancy >40 to 42 weeks.

#### Data collection and analysis :

Collected data for individual women, such as socio demographic information, chief complains on admission, history of past illness, family history, menstrual history, obstetric history, general examination, per abdominal examination, pervaginal examination, clinical investigation, treatment, obstetric management, fetal outcome and post delivery maternal outcome, were recorded in predesigned data collection sheet. Collected data were compiled and appropriate

analysis, such as Chi-square test and unpaired Student' t' test, were done using computer based software, Statistical package for Social Science (SPSS). P value <0.05 was taken as minimum level of significance.

#### Results :

**Table -I Incidence of postdated pregnancy**

Number of patients admitted in antenatal ward during the study period	2268
Number of postdated pregnancy during the study period	206
<b>Incidence</b>	9.1%
Number of patients included in the present study	80
Primigravida	42 (52.5%)
Multigravida	38 (47.5%)

**Table II Age distribution**

Age group(years)	Primigravida (n=42) No (%)	Multigravida (n=38) No (%)	P value
≤30	42(100)	26(68.4)	<0.001*
>30	0	12(31.6)	
Mean± SD	21.81 ± 2.00	28.32 ± 5.91	<0.001*
Range	18-26	20-39	

\*\*\*=Significant

**Table-III Presenting features of the study women**

Presenting features	Primigravida (n=42) No(%)	Multigravida (n=38) No(%)	P value
Pain in lower abdomen	28(66.7)	30(78.9)	>0.10 <sup>ns</sup>
Present	14(33.3)	8(21.1)	
Absent			
Pervaginal Bleeding	22(52.4)	22(57.9)	>0.50 <sup>ns</sup>
Present	20(47.6)	16(42.1)	
Absent			
Fetal movement	36(85.70)	30(78.9)	>0.10 <sup>ns</sup>
Normal	4(9.5)	8(21.1)	
Reduced	2(4.8)	0	
Absent			

ns =Not significant

**Table – IV Amount and colour of liquor in the study groups**

Parameters	Primaegravida	Multigravida	P value
	(n=42)	(n=38)	
	No (%)	No (%)	
Amount of liquor			>0.5 <sup>ns</sup>
Adequate	30(71.4)	24(63.2)	
Less	10(23.8)	10(26.3)	
Excessive	2(4.8)	4(10.5)	
Colour of liquor			>0.1 <sup>ns</sup>
Clear	18(42.9)	22(57.9)	
Meconium	18(42.9)	12(31.6)	
Stained	6(14.3)	4(10.5)	
Hemorrhagic			

**Table-V Status of fundal height of the uterus and cervix dilatation**

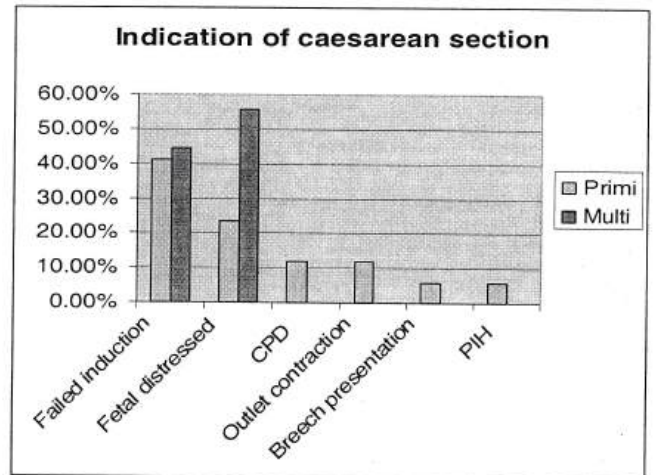
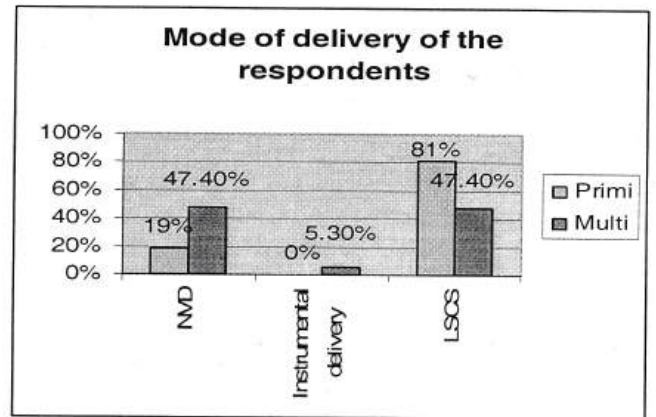
Parameters	Primaegravida	Multigravida	P Value
Fundal height (cm)	35.71± 1.77	36.42±1.52	>0.05 <sup>ns</sup>
Mean±SD	32.0-38.0	34.0—38.0	
Range			
Cervixdilatation (cm)	1.24± 1.11	1.87± 1.30	>0.05*
Mean± SD	0-3.0	0-4.0	
Range			
Cervical effacement	35.33± 15.91	42.63±13.49	>0.05*
Mean± SD	0.0- 60.0	0.0—60.0	
Range			

ns =Not significant

\*=Significant

**Table-VI Mode of onset of labour pain and augmentation of labour pain**

Parameters	Primaegravida	Multigravida	P value
	(n=42)	(n=38)	
	No (%)	No (%)	
Mode of onset of labour			>0.10 <sup>ns</sup>
Spontaneous	16(38.1)	18(47.4)	
Induced	26(61.9)	20(52.6)	
Augmentation of labour pain			>0.10 <sup>ns</sup>
Required	32(76.2)	26(68.4)	
Not required	10(23.8)	12(31.6)	



**Table VII Fetal weight and Apgar score**

Parameters	Primaegravida (n=42)	Multigravida (n=38)	P value
Fetal weight (kg)	2.93± 0.31	3.01± 0.40	>0.10 <sup>ns</sup>
Mean ± SD	2.40-3.50	2.30-3.60	
Range			
Apgar score (1-min)	7.19±1.19	6.61±1.05	<0.05 <sup>ns</sup>
Mean± SD	5.0-9.0	5.0-8.0	
Range			

ns =Not significant

**Table VIII Post delivery complications**

Complications	Primaegravida	Multigravida	P Value
Neonatal	8(19.0)	14(36.8)	>0.10 <sup>ns</sup>
Asphyxiation	2(4.8)	0	
Jaundice	32(76.2)	24(63.2)	
None			
Maternal	6(14.3)	2(5.3)	>0.10 <sup>ns</sup>
Wound dehiscence	6(14.3)	2(5.3)	
PPH	0	2(5.3)	
UTI	0	2(5.3)	
Cervical tear	2(4.8)	2(5.3)	
Retained placenta	28(66.7)	28(73.7)	
None			

Chi-square test

Ns=Not significant

## Discussion :

In the present study out of 80 women with postdated pregnancy, 42(52.5%) were primae gravida and 38(47.5%) were multigravida. Studies by Jahan<sup>5</sup> at Dhaka Medical College Hospital found 39.28%. Bhuiyan et, al<sup>6</sup> at Mymensingh Medical College Hospital found 47.20% primae gravida. In our study all the women of primae gravida group belonged to age group <30yrs(100%) compared to (68.4%) multigravida. Thambu<sup>7</sup> found majority of the women belonged to primae gravida group. Height and weight of multigravida women were higher than the primae gravida. When presenting features were compared between primae gravida and multigravida groups, no significant difference was observed regarding presence of pain in lower abdomen(66.7% vs. 78.9%) presence of per vaginal bleeding(52.4 vs. 57.9%) and normal fetal movement (85.7% vs. 78.9%). Amount (adequate 71.4% vs. 63.2%) and colour of liquor (clear 42.9% 57.9%) also did not show any significant difference between primae gravida and multigravida. Membrane was found ruptured in 12(28.6%) primae gravida and 18(47.4%) multigravida. Pelvis was contracted 12(28.6%) in primae gravida and 4 (10.5%) in multigravida. Pelvis was contracted 12(28.6%) in primae gravida and 4 (10.5%) in multigravida. Fundal height did not show any significant difference between primae gravida (mean SD 35.71 1.77cm) and multigravida (mean SD 36.42 1.52cm). Cervix dilatation and effacement was significantly more in multigravida compared to primae gravida. Mode of onset of labour pain was spontaneous in 16(38.1%) and 18(47.4%) and induced in 26(61.9%) and 20(52.6%) among primae gravida and multigravida respectively. Augmentation was required in 32(76.2%) primae gravida and 26(68.4%) multigravida. In this study, significantly more multigravida achieved normal vaginal delivery (19% primae gravida and 47.4% multigravida) There were 2 assisted vaginal deliveries among multigravida.

Significantly higher number of primae gravida (81%) delivered by LUCS compared to multigravida (47.4%) due to failed induction and fetal distress and other obstetrical complications like CPD, outlet contraction, breech presentation, Prenancy induced hypertention. Mawambingu et al<sup>8</sup> did not find any difference regarding operative intervention between primae gravida and multigravida. Fauzia<sup>9</sup> in her study found higher incidence of LUCS (37%) among primigravida. Different studies showed normal deliveries as 49 percent<sup>10</sup>, 29 percent<sup>11</sup> and 54 percent<sup>12</sup> among primae gravida.

Postdated pregnancy did not affect significantly on the fetal weight between primae gravida and multigravida group (mean± SD 0.31 vs. 3.01±0.40 kg). However Apgar score was

significantly lower in multigravida group (mean±SD 6.61±1.05) compared to primae gravida group (mean± SD 7.19± 1.10). This study found increased incidence of neonatal complications such as asphyxia, in multigravida (36.8%) group compared to primae gravida group (19%). However maternal post delivery complications were higher among primae gravida compared to multigravida. Our findings differ from the findings of Karim et al<sup>13</sup> Ozumba and Igwegbe<sup>14</sup> Aziz<sup>15</sup> and Chowdhury and Begum<sup>16</sup> who found increased incidence of antenatal complications among multigravida In the present study, there was no neonatal or maternal death. The reason may be due to proper antenatal care and obstetric care.

## Conclusion :

Prolonged pregnancy carries an increased rate of perinatal mortality and morbidity for the fetus. This study found that there was some basic and specific difference on postdated pregnancy outcome between primae gravida and multigravida, but overall outcome did not vary significantly. Universally, multigravida is considered as high-risk group and in this study fetal distress during labour and birth asphyxia were found more in multigravida patient. During this study period as CTG machine was not available so proper fetal monitoring could not be possible. However, with easy availability of adequate facilities, and modern and sophisticated equipment like continuous electronic fetal monitoring and fetal blood sampling in labour the scenario will be changed considerably. Obstetrician must be vigilant that postdated pregnancy should not be postmature and labour should not be prolonged so that we can avoid fetal mortality and morbidity.

Expert neonatal assistance must be present at the time of delivery. In developing country like Bangladesh as modern facilities are not available in everywhere so we can assess clinically prolonged pregnancy by symphysis fundal height, weight loss, amniotic volume. To arrive at a definite conclusion, further long-term studies with larger population size is suggested.

## Bibliography :

1. Anderson ABM, Laurence KM, Turnbull AC. The relationship in anencephaly between the site of the adrenal cortex and the length of gestation. *J Obstet Gynecol* 1969; 76 :196.
2. Boyce A, Mayaux MJ, Schwartz P. Classical and true gestational postmaturity. *Am J Obstet Gynecol* 1976; 125:911.
3. Robinson HP, Flemming JEE. A critical evaluation of sonar crown-rump length measurements. *Br J Obstet Gynecol* 1975;82:702.
4. Manning FA, Platt LD, Sapos L. Antepartum fetal evaluation: development of the fetal biophysical profile. *Am J Obstet Gynecol* 1980;136:7871)
5. Jahan R. Clinical profile and outcome of labour in primigravida: a study of 100 cases (dissertation) Bangladesh College of Physicians and Surgeons, 1996.

6. Bhuiyan SN, Rahman S, Ahmed G. Characteristics of maternity care in Chittagong Medical College Hospital 1977-79. *BFRP* 1980; 33-52.
7. Thambu JA. Obstetric performance of rural primigravidae 1765-1968 in Kuantang, Pahang. *Med J Malaysia* 1972; 26:278-84.
8. Mwambingu FT, Al-Meshari AA, Akiel A. The problem of grandmultiparity in current obstetric practice. *Int J Obstet gynaecol* 1992; 26:355-9.
9. Fauzia S. A clinical study of caesarian section of Sylhet Medical College Hospital (dissertation) Dhaka: Bangladesh College of Physicians and surgeons, 1988.
10. Friedman EA. Primigravidae labour: a graphicostatical analysis. *Obstet Gynaecol* 1955; 6:567-89.
11. Duignan NM, Studd JWW, Jughes AO. The characteristics of normal labour in different racial groups. *Br J Obstet Gynaecol* 1975; 82(8): 593-601.
12. Meyer S, Honlfield P. Birth trauma: short and long term effects of forceps delivery of various pelvic floor parameters. *Int J Obstet Gynecol* 2000; 107:1361.
13. Karim AS, Memon AM, Oadri N. Grandmultiparity: a continuing problem in developing countries. *Asia Oceania J Obstet Gynaecol* 1989; 15: 155-60.
14. Ozumba BC, Igwegbe AO. The challenge of grandmultiparity in Nigerian obstetric practice. *Int J Obstet Gynaecol* 1992; 1989; 15: 155-60.
15. Aziz FA. Pregnancy and labour of grandmultiparous Sudanese women. *Int J Obstet Gynaecol* 1980; 18:144-6
16. Chowdhury S, Begum B. study on maternal and perinatal outcome of grandmultiparity. *Bangladesh J Obstet Gynaecol* 1993; 18:8-14.