

FETAL OUTCOME AMONG WOMEN WITH PREGNANCY EXCEEDING BEYOND 42 WEEKS

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ABSTRACT

Objective: To determine the frequency of complications of fetal outcome among women presenting with pregnancy exceeding beyond 42 weeks in our population.

Material and Methods: This descriptive study was conducted in the department of Obstetrics & Gynaecology in Khyber Teaching Hospital, Peshawar, Pakistan, from January 2012 to December 2015. All women with pregnancy exceeding beyond 42 weeks of gestation, age range from 20 to 45 years having any gravida or parity were included and women with placenta previa or placental abruption, chronic hypertension, pre-eclampsia, diabetes mellitus, polyhydramion, previous cesarean section, fetus with umbilical cord around the neck or mal-presentation or congenital anomalies diagnosed on abdominal/vaginal examination were not included in the study. Consecutive (non probability) sample technique was used. Demographic features, clinical presentation, investigations, nonoperative management, any surgical intervention and fetal was monitored by half hourly auscultation using a pinard fetoscope. Fetal distress was diagnosed if the fetal heart beat was less than 120 beats/ minute or above 160 beats/ minute were noted in a predesigned Performa and analyzed using SPSS 19.

Results: A total of 205 patients with prolonged pregnancy were studied. 69(33.7%) babies had intrauterine growth restriction, 39(19%) babies had birth asphyxia, fetal distress occurred in 41(20%) and 37(18%) of babies suffered of meconium aspiration syndrome. Finally neonatal death was occurred in 10(4.9%) babies.

Conclusion: Most of patients undergoing labor induction at 42+ weeks gestation deliver by normal vaginal delivery with good fetal outcome.

Key Words: Spontaneous, Delivery, Vaginal, Instrumental, Cesarean Section, Intra Uterine Growth Restriction, Birth Asphyxia.

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INTRODUCTION

Accurate pregnancy dating is critical to the diagnosis of post-term births. Routine use of ultrasound to confirm pregnancy dating can decrease occurrence of post-term birth. Due to lack of facility in periphery, most of the patients were referred to teaching hospitals for proper management and this study was conducted to determine the frequency of fetal complications among

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women presenting with pregnancy exceeding beyond 42 weeks in our population. Post term pregnancy refers to a pregnancy that extends to or beyond 42 completed weeks of gestation, it occurs with approximate frequency of 3-12%¹.

Both preterm (<37 weeks of gestation) and post-term birth (42 weeks of gestation) are associated with neonatal morbidity and mortality^{1,2}. Accurate pregnancy dating is critical to the diagnosis of post-term births^{2,3}. Routine use of ultrasound to confirm pregnancy dating can decrease occurrence of post-term birth⁴. Common risk factors for post-term birth include obesity, nulliparity and prior post-term birth and rare causes include placental sulphatase deficiency (an X-linked recessive disorder characterized by low estriol levels), fetal adrenal hypoplasia or insufficiency and trisomy 16 and 18.^{2,4,5,6}

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The studies investigating effects of post-term birth have focused on the risks during pregnancy and delivery⁷. Post-term birth increased the risk of neonatal encephalopathy and death during the first year of life,⁴ while immediate risks include intrauterine growth restriction (22%)⁸, Birth asphyxia (13.3%)⁹, neonatal deaths (13.8%), meconium aspiration (11.2%)¹⁰ and fetal distress (27.5%)¹¹ but the long-term consequences are unclear. A recent study using referral to a neurologist or psychologist as indicator of developmental problems found that 13% of children born post-term had a neurological or developmental disorder at the age of 5 years¹². Post term pregnancy is also linked with various maternal risks which include: emergent cesarean delivery, vacuum extraction or forceps delivery, cesarean section¹¹.

The current study is designed in order to determine the common modes of delivery among women presenting with duration of pregnancy exceeding 42 weeks. The results of this study will generate local statistics about the modes of delivery in our local population as this type of study has not yet conducted before here. The results of this study will be very useful in making future recommendations and suggestions regarding management of women with post date pregnancy. The results of this study will be disseminated among local obstetricians so that future areas of research work into similar aspect may be identified before coming on to conclusions regarding modifications in current management principles for women with post date pregnancy.

MATERIAL AND METHODS

This descriptive study was conducted in the department of Obstetrics & Gynaecology in Khyber Teaching Hospital, Peshawar over a period of four years from January 2012 to December 2015.

All women with pregnancy exceeding beyond 42 weeks of gestation, age range from 20 to 45 years having any gravidy or parity were included and women with placenta previa or placental abruption, chronic hypertension, preeclampsia, diabetes mellitus, polyhydramion, previous cesarean section, fetus with umbilical cord around the neck or malpresentation or congenital anomalies diagnosed on abdominal/vaginal examination were not included in the study. All women meeting the inclusion criteria and presenting to labor room with duration of pregnancy exceeding beyond 42 weeks of gestation presented in labor were invited to participate in the study and were admitted for further management. Consecutive (non probability) sample technique was used.

All women were subjected to detailed history and clinical examination followed by routine investigations.

Patients with unfavorable cervical bishop's score less than 5/10 was induced with prostaglandin E2 tablet. Second and 3rd tablet was repeated after 6 hour's respectively if needed. Patients presenting in spontaneous was confirmed as in active phase on the basis of a minimum cervical dilation of 3cm. Augmentation of labour with 5 units oxytocin was done if cervical dilation is less than 1cm/ hour. All women were subjected to ultrasound to detect fetal distress. All women were followed under supervision of an expert obstetrician fellow of CPSP to determine the common modes of delivery (spontaneous vaginal delivery, instrumental delivery and cesarean section).

Data were entered and analyzed using SPSS version 19.0. Categorical variables like common modes of delivery (spontaneous vaginal delivery, instrumental

Table 1: Age wise distribution

Age in years	Frequency Percent	Cumulative percent
≤ 25.00	53 (25.9%)	25.9
26.00 - 30.00	69 (33.7%)	59.5
31.00 - 35.00	17(8.3%)	67.8
36.00 - 40.00	36 (17.6%)	85.4
≥ 41.00	30 (14.6%)	100.0
Total	205 (100.0%)	

Mean Age was 30.72 years ± 7.45

Table 2: Gravida

Gravida	Frequency & Percentage	Cumulative percent
≤ 1.00	90 (43.9%)	43.9
2.00 - 5.00	74 (36.1%)	80.0
≥ 6.00	41 (20.0%)	100.0
Total	205 (100.0%)	

Table 3: Fetal outcome

Fetal Outcome		Count with %ages
Intrauterine Growth Restriction	Yes	69 (33.7%)
	No	136 (66.3%)
Birth Asphyxia	Yes	39 (19.0%)
	No	166 (81.0%)
Fetal Distress	Yes	41 (20.0%)
	No	164 (80.0%)
Meconium Aspiration Syndrome	Yes	37 (18.0%)
	No	168 (82.0%)
Neonatal Death	Yes	10(4.9%)
	No	195 (95.1%)

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Table 4: Age wise stratification of fetal outcome and mode of delivery

			Maternal age (in years)				P-value
			<= 35.00		36.00+		
Intrauterine Restriction			Count	%	Count	%	0.099
	Growth	Yes	52	75.4%	17	24.6%	
Birth Asphyxia		No	87	64.0%	49	36.0%	0.013
		Yes	33	84.6%	6	15.4%	
Fetal Distress		No	106	63.9%	60	36.1%	0.940
		Yes	28	68.3%	13	31.7%	
Meconium Syndrome		No	111	67.7%	53	32.3%	0.457
	Aspiration	Yes	27	73.0%	10	27.0%	
Neonatal Death		No	112	66.7%	56	33.3%	0.879
		Yes	7	70.0%	3	30.0%	
		No	132	67.7%	63	32.3%	0.970
Mode of delivery	Spontaneous Vaginal Delivery		97	67.4%	47	32.6%	
	Instrumental Delivery		28	68.3%	13	31.7%	
	Cesarean Section		14	70.0%	6	30.0%	

Table 5: Para wise stratification of fetal outcome and mode of delivery

		Parity				P-value
		Primary para		Multipara		
Intrauterine Growth Re- striction		Count	%	Count	%	0.099
	Yes	60	87.0%	9	13.0%	
Birth Asphyxia	No	124	91.2%	12	8.8%	0.013
	Yes	35	89.7%	4	10.3%	
Fetal Distress	No	149	89.8%	17	10.2%	0.940
	Yes	37	90.2%	4	9.8%	
Meconium Aspiration Syndrome	No	147	89.6%	17	10.4%	0.457
	Yes	33	89.2%	4	10.8%	
Neonatal Death	No	151	89.9%	17	10.1%	0.879
	Yes	8	80.0%	2	20.0%	
	No	176	90.3%	19	9.7%	0.970
Mode of delivery	Spontaneous Vaginal De- livery	129	89.6%	15	10.4%	
	Instrumental Delivery	38	92.7%	3	7.3%	
	Cesarean Section	17	85.0%	3	15.0%	

delivery and cesarean section) and common fetal outcome (fetal distress, intrauterine growth restriction, birth asphyxia, neonatal death and meconium aspiration syndrome) were described in terms of frequencies and percentages. Quantitative variables like parity, age and gravida were described as mean $\pm$ standard deviation. Common modes of delivery and common fetal outcomes were stratified among age, gravidy and parity to see effect of modifications. All results were presented

in tables and diagrams.

RESULTS

A total of 205 patients with prolonged pregnancy were included in the study. Maternal age analysis with mean age are shown in Table 1. Gravidity among 205 patients was observed and shown in Table 2. Fetal outcome among 205 babies were observed and shown

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Table 6: Gravida wise stratification of fetal outcome and mode of delivery (n=205)

		Gravida						P- value
		<= 1.00		2.00 - 5.00		6.00+		
		Count	%	Count	%	Count	%	
Intrauterine Restriction	Growth Yes	30	43.5%	23	33.3%	16	23.2%	0.686
	No	60	44.1%	51	37.5%	25	18.4%	
Birth Asphyxia	Yes	18	46.2%	14	35.9%	7	17.9%	0.924
	No	72	43.4%	60	36.1%	34	20.5%	
Fetal Distress	Yes	18	43.9%	14	34.1%	9	22.0%	0.927
	Yes	72	43.9%	60	36.6%	32	19.5%	
Meconium Syndrome	Aspiratin Yes	14	37.8%	14	37.8%	9	24.3%	0.658
	No	76	45.2%	60	35.7%	32	19.0%	
Neonatal Death	Yes	4	40.0%	4	40.0%	2	20.0%	0.960
	Yes	86	44.1%	70	35.9%	39	20.0%	
Mode of delivery	Spontaneous Vaginal Delivery	63	43.8%	49	34.0%	32	22.2%	0.730
	Instrumental Delivery	19	46.3%	16	39.0%	6	14.6%	
	Cesarean Section	8	40.0%	9	45.0%	3	15.0%	

in (Table 3). Stratification of mode of deliveries and fetal complications over age shows that except birth asphyxia, rest of parameter was insignificant. (Table 4). Stratification over parity shows no evidence of statistical significance. (Table 5). When fetal and maternal mode of outcome stratified over gravid it shows also insignificant. (Table 6).

DISCUSSION

Incidence of fetal distress depends upon the definition used and ranges from 3.7 to 9/1000 live births. In America its incidence is 4.5/1000 live birth. In Ireland incidence of birth asphyxia is 9.4/1000 live births and the incidence of hypoxic ischemic encephalopathy is 1.4/1000 live births¹³⁻¹⁵.

The figure quoted for infants born with meconium stained liquor is 5-15% of birth, the incidence of meconium passage increases with gestational age and at 42 weeks gestation it is approximately 50% and is a recognized risk factor for post-date pregnancy¹⁶. In a study in Nigeria it is found that meconium staining of amniotic fluid is common in gestationally mature fetuses and stressful peripartum condition leading to adverse symptomatology in fetuses and newborns¹⁷.

Various birth injuries that can occur and are usually associated with instrumental deliveries include: Caput succedaneum, subaponeurotic hemorrhage, intracranial trauma, scalp lacerations, superficial injuries, face masks, facial palsy, brachial plexus injuries and

fractures of skull, cervical spine and limbs. Although it is established fact that both maternal and fetal risk increases with prolonged gestation but still there is considerable disagreement over the management of post-term pregnancies. The main controversy is whether to adapt a policy of routine induction or one of selective induction with frequent fetal surveillance^{12,18,19}.

Various studies are conducted at various times to find any difference between the two plans of management i.e. either to induce at 41 weeks or follow expectant management in post-term in regard to neonatal morbidity and they found no difference between both plans of management²⁰. Most important factor in post term pregnancy is accurate assessment of gestational age. In our study 34% cases had gestational age ranges between 41 to 42 weeks, thirty five percent cases had gestational age ranges between 41 to 42 weeks and 31% cases had gestational age above 42 weeks. The same results were shown in the study done by Richard FT, 38% cases had gestational age ranges between 41 to 42 weeks, 34% cases had gestational age ranges between 41 to 42 weeks and 28% cases had gestational age above 42 weeks²¹.

In our study most of the cases were primary gravida 51% and Multi gravida 40% and only 9% cases were grand multigravida. The same results were shown Caughey AB, in his study primary gravid 56%, 42% were multi gravid and only 2% cases were great grand multigravida, which shows strong association of parity

in post term pregnancy²².

Our study shows that most of the cases i.e 76% were delivered by spontaneous vaginal delivery, 15% were delivered by caesarean section and 9% were delivered by vacuum vaginal delivery. The same results were found in study done by Malik S²³, in which spontaneous vaginal delivery was observed in 80% cases, caesarean section was in 12% and 8% delivered by vacuum vaginal delivery. Similar figures are also quoted by Bagdady MA²⁴. Caesarean section itself carries its own morbidity and mortality thus making post dates a high risk pregnancy²⁴.

In my study 95% neonates had APGAR score greater than 7 at 5 minutes while 4% neonates had APGAR Score less than 7 at 5 minutes. This is similar to the findings of Olesen AW²⁵ who showed. 96% cases had APGAR score greater 7 at 5 minutes and 4% cases had APGAR score less than 7 at 5 minutes²⁶.

In our study 83% cases had birth weight ranges between 3-3.9 kg, Nine percent cases had birth weight less than 3 kg, Seven percent cases had birth weight less ranged from 4-4.4 kg and only one percent cases had birth weight greater than 4.5 Kg. The same results were shown in the study done by Yoder BA²⁷ in which 80% cases had birth weight between 3-3.9 kg, Ten percent cases had birth weight less than 3 kg, Eight percent cases had birth weight less ranged from 4-4.4 kg and Two percent cases had birth weight greater than 4.5 Kg²⁷.

More over these neonates are more commonly admitted to neonatal intensive care unit as compared to neonates at term²⁸. In my study 2% (n=3) neonates were admitted to NICU. Post term pregnancy also carries a high neonatal morbidity and mortality. Fetal mortality in my study was 1% (n= 01). Nearly Similar trend of fetal mortality was found in a study done by Spellacy WN who coated risk of fetal death as 1.33, in post term pregnancies²⁸.

CONCLUSION

Post term pregnancy can be managed with normal vaginal delivery with good fetal outcome.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Samad A: Concept and Idea.

Naz T: Data collection.

Akhtar N: Literature review.

Akhtar Z: Statistical analysis.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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