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A STUDY ON POSTDATED PREGNANCY AND ITS PERINATAL OUTCOME IN A TERTIARY CARE HOSPITAL

Gynaecology

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ABSTRACT

INTRODUCTION: Postdated pregnancy is an everyday problem for the obstetrician. In this study the various aspects of postdated pregnancy and risk to the fetus in postdated pregnancy were evaluated, such as to find out the socio epidemiological factors in postdated pregnancy , to study the obstetric consequences of postdated pregnancy and to study the impact of postdated pregnancies in perinatal morbidity and mortality.

MATERIALS AND METHODS: The study was carried out in 100 patients from GTMCH, Theni, during the period from Jan 2017 to Dec 2018. Besides detailed history, all patients after admission underwent obstetrical examination (special reference to amount of liquor and feel of the head) and routine antenatal investigation. The patients were also taught to keep a fetal kick chart.

Primary surveillance was done with Real-time Ultrasound fetal evaluation. Each of the variables was coded as normal or abnormal. These ultrasonic parameters were used as a criteria in deciding the time and mode of delivery. Early amniotomy to detect meconium and careful fetal monitoring during labour was undertaken

RESULTS: Among the study group 68% of women were between 21-30 years. 44 women were primigravida. Among those 44 primigravida 2 were elderly primi. 12% of the cases gave history of consanguineous marriage and no congenital anomaly was found among any one of them or in the present study group. Incidence of post term pregnancy is varied from 4.4% to 14.9%.

Foetal distress and meconium release occurred more commonly in postdated pregnancy. There was a progressive decrease in the amniotic fluid volume after 40 weeks. There were 49 cases (49%) went into labour with normal biphysical scoring. 3 of them (6.12%) showed evidence of foetal distress in labour. 2 of the babies had a apgar score of less than 7 (4.08%).

Among the 82 cases where the labour was induced 92% delivered vaginally and only 8% delivered by caesarean section. There was a slight increase in the incidence of instrumental deliveries (13.3%). 50% of the cases the indication for instrumental delivery was foetal distress.

The present study neonatal asphyxia was found in 6% of the cases. The number of pregnancies complicated by evidence of foetal distress was 13 and among them 4 babies had meconium aspiration

CONCLUSION: Post mature pregnancy is a complex perinatal problem and ranks as a major source of perinatal morbidity and mortality, among term pregnancies. To improve the outcome attempts should be made to determine the estimated date of confinement in all pregnancies before the third trimester by emphasizing the early and regular antenatal checkup. Antepartum surveillance should be performed in all pregnancies that might have reached 42 weeks of amenorrhoea.

Emergence of improved antepartum testing and effective cervical ripening agents (Prostaglandins and relaxin) may improve the outcome and management of postdated pregnancies.

During the intrapartum period special attention should be paid to careful fetal monitoring. Anticipation for the complication and proper management of the baby in the neonatal unit goes a long way to improve the outcome in post dated pregnancy.

KEYWORDS

Postdated, fetal distress, perinatal

INTRODUCTION

Improvements in Perinatal outcome allow the obstetrician to focus on the more subtle pregnancy disorders that may contribute to morbidity and mortality.[1] Postdated pregnancy is an everyday problem for the obstetrician. For a long time there has been concern about the post dated pregnancy as a factor in perinatal outcome. In this study the various aspects of postdated pregnancy and risk to the fetus in postdated pregnancy were evaluated, such as to find out the socio epidemiological factors[2] in postdated pregnancy , to study the obstetric consequences of postdated pregnancy and to study the impact of postdated pregnancies in perinatal morbidity and mortality.

MATERIALS AND METHODS

The study was carried out in 100 patients from GTMCH, Theni, during the period from jan 2017 to dec 2018, those who fulfilled all of the following criteria's – the gestational period more than 40 weeks (280 days) with a history of regular menstrual cycles, - certainty of the last menstrual period where the last menstrual flow normal in duration and amount. – An Early prenatal visit of less than or equal to 16 weeks gestation and the uterine size corresponded to the period of amenorrhea and where the post dated pregnancy was the only complication.

Besides detailed history, all patients after admission underwent obstetrical examination (special reference to amount of liquor and feel of the head) and routine antenatal investigation. The patients were also taught to keep a fetal kick chart.

Primary surveillance was done with Real-time Ultrasound fetal evaluation. Each of the variable was coded as normal or abnormal. These ultrasonic parameters were used as a criteria in deciding the time and mode of delivery. Early amniotomy to detect meconium and careful fetal monitoring during labour was undertaken. The end points used to assess the outcome of pregnancy were

1) fetal distress in labour
2) 5 minute apgar score
3) Perinatal mortality

RESULTS AND DISCUSSION

AGE GROUP AND PARITY DISTRIBUTION IN POST DATED PREGNANCY

Table 1: Age

Age	Number of Patients	%
20 years & below	18	18%
21-30 years	68	68%
More than 30 years	14	14%

Table 2: Parity

Parity	Number of Patients	%
Primi	44	44%
II	28	28%
III	16	16%
IV and above	12	12%

Among the study group 68% of women were between 21-30 years. 44 women were primigravida. Among those 44 primigravida 2 were elderly primi.

Mc Kiddle noted no significant difference in the age group of the

patients with prolonged pregnancy. According to Mudaliar and Menon elderly primi and multigravida are more likely to have post term pregnancy.

Table 3:socio-economic status

Income Rupees / month	Number of Patients	%
2000 – 3000	18	18%
3000 – 4000	72	72%
4000 – 5000	8	8%
More than 5000	2	2%

72% of cases were in the income group of Rs.3000 – 4000 per month. Since the majority of patients were from poor socio-economic group no comparative study could be done between the patient of different socio-economic background.

Table 5: consanguity in postdated pregnancy

Total Number of Patients	History of consanguineous Marriage	&
100	12	12%

12% of the cases gave history of consanguineous marriage and no congenital anomaly was found among any one of them or in the present study group.

Table 6 : Duration of pregnancy among the study group (According to LMP)

Gestational Age (Completed weeks)	Number of Patients	&
41	36	36%
42	49	49%
More than 42	15	15%

In the present study 15% of cases were beyond 42 weeks.

Incidence of post term pregnancy is varied from 4.4% to 14.9% (John Studd Vol.5). It is 3-14% (Arul kumaran. 1986). According to Mudaliar and Menon it is 10-12%.

Table 7: correlation of gestational age and perinatal outcome

Gestational age completed weeks	Number of Patients	Foetal distress in labour	5 minute apgar < 7	Perinatal mortality
41	36	1 (2.7%)	1 (2.7%)	-
42	49	8 (16.3%)	3 (6.12%)	-
More than 42	15	4 (26.6%)	2 (13.3%)	1 (6.6%)

Foetal distress and meconium release occurred more commonly in post dated pregnancy. There was a progressive increase in the incidence of foetal distress from 2.7% at 41 weeks and 16.3% at 42 weeks and 26.6% when the pregnancy was beyond 42 weeks. Meconium when released was thick and scanty (pea-soup).

Depression at birth is defined by 5 minute apgar score less than 7. Among babies delivered at 41 weeks 2.7% showed evidence of birth asphyxia whom needed a positive pressure bag and mask ventilation. There was a five fold increase in birth asphyxia when the pregnancy was beyond 42 weeks.

There was no perinatal mortality among the women with 40,41 completed weeks of gestation but among the 15 cases who have gone post term one baby was lost after admission in the neo natal unit. (Hypoxic encephalopathy).

ULTRASOUND EVALUATION AND ITS CORRELATION WITH PERINATAL OUTCOME

Patients were instructed to have meal 1-2 hrs before the evaluation. The Real Time ultrasound is used initially to screen foetus for gross anomalies. Placental grading is also performed. Amniotic fluid volume is recorded by amniotic fluid index. The foetus is then viewed in its longitudinal plane to allow observation of foetal thorax, abdomen and upper limbs. In this way foetal breathing movement as well as upper limb and trunk movements can be seen. Differentiation from sleep state to hypoxemic effect is achieved by extending the observation time until either the variables appear or atleast 30 minutes of continues observation elapsed.

Table 8 : Amniotic fluid volume study

Gestational age (completed weeks)	Total no.of Patients	Amount of liquor		
		Normal (AFI > 8_ 18)	Intermediate AFI (5-8)	Diminished AFI < 5
41	36	28 (77.7%)	6 (16.6%)	2 (5.5%)
42	49	32 (65.3%)	13 (26.5%)	4 (8.16%)
More than 42	15	4 (26.6%)	6 (40.0%)	5 (33.3%)

There was a progressive decrease in the amniotic fluid volume after 40 weeks. With 41 completed weeks of pregnancy the liqour was diminshed in only 5.5% of cases where as when pregnancy goes beyond 42 weeks oligohydramios occurs in 33.3% of cases.

Beischer **et al** (1986) had also demonstrated such a decrease beginning after 40 weeks of pregnancy.[3,4]

Table 9 : Correlation of amniotic fluid volume with perinatal outcome

Amniotic fluid volume	Number of acses	Foetal distress in labour	5 minute apgar <7	Perinatal mortality
Normal AFI (8.1-18)	64	1 (1.5%)	-	-
Intermediate AFI (5-8)	25	7 (28.0%	3 (12.0%)	-
Diminished AFI (< 5)	11	5 (45.4%	3 (27.2%)	1(9.0%)

When the amniotic fluid volume was normal incidence of foetal distress was 1.5% and when the liquor was markedly diminished it was about 45.4%. Incidence of birth asphyxia and perinatal mortality was 27.2% and 9% respectively when there was oligohydramious.

All these findings suggest that the postdated foetus with decreased amniotic fluid volume is at risk for intrauterine foetal death and neonatal mortality.

Table 10: Placental grading

Gestational age (completed weeks)	Number of patients	Placental grading		
		I	II	III
41	36	-	32 (88.8%)	4 (11.1%)
42	49	-	37 (75.5%)	12 (24.4%)
More than 42	15	-	7 (46.6)	8 (53.3%)

In the present study Grade I placenta is not found in any of the 100 cases. Grade III placenta is almost 5 times higher in pregnancy beyond 42 weeks than that of 41 completed weeks.

Grannum and Hobbins (1982) described the placental maturation at or after 42nd week of gestation.

55% to be Grade II.
45% to be Grade III.

In the present study Grade II placenta : 46.6%, Grade III placenta : 33.3%.

In 1987 Rajini Goyal and Gupta described the placental grading in post date pregnancy as Grade I – 24%, Grade II – 61% and Grade III – 15%.

Table 11:Placental grading and its correlation with perinatal outcome

Placental grading	Number of Patients	Foetal Distress in Labour	5 minute Apgar <7	Perinatal mortality
II	76	7 (9.2%)	3 (3.9%)	-
III	24	6 (25.0%)	3 (12.5%)	1 (4.16%)

With grade III placenta the evidence of foetal distress was 25% and birth asphyxia was 12.5% compared to 9.2% and 3.9% respectively in grade II placenta.Vintzileos **et al.** established that Grade III placenta was associated with an abnormal foetal heart rate tracing and abruptio placenta during labour. [5,6] They included placental grading as a part of their biophysical profile examination. The use of placental grading as a part of biophysical profile is not widely accepted however.

Table 12:Foetal biophysical activities

Gestational age (completed weeks)	Total Number of Patients	Foetal 2	Tone 0	Foetal Breathing Movement 2	0	Foetal Body Movement 2	0	Foetal Cardiac activity 2	0
41	36	36 100%	-	36 100%	-	36 100%	-	36 100%	-
42	49	49 100%	-	47 95.9%	2 4.06%	49 100%	-	49 100%	-
More than 42	15	13 86.6%	2 13.3%	13 86.6%	2 13.3%	13 86.6%	2 13.3%	15 100%	-

The distribution of foetal score in this study indicates the majority of babies were normal (98%). Manning **et al.** 1985 also obtained a normal score of 97.5 of the patients.[7] The higher incidence of normal results leads to less anxiety.

Foetal body movement and foetal tone were present in almost all the patients (100%) with 41, 42 completed weeks, when the pregnancy was beyond 42 weeks it was present only in 86.6%.

Foetal breathing movement was present in all cases of 41 completed weeks. In 42 completed weeks it was present in 95.9% of cases after 42 weeks gestation only in 86.6% of cases.

In antepartum foetal evaluation the presence or absence of acute marker of foetal condition (FBM, GBM and FT). determine the level of foetal compromise at the time of study. The assurance of well being of foetus at risk can prevent early intervention and associated risks of failed induction and increased percentage of operative deliveries.

TABLE 13: Foetal Biophysical Activities And Its Correlation With Perinatal Outcome

Foetal Biophysical Activities	Total Number of patients		Evidence of foetal Distress	5 Minutes Apgar < &	Perinatal mortality
Foetal breathing Activities	100	Present 96 Absent 4	11(11.4%) 2(50.0%)	4 (4.16%) 2 (50.0%)	1 (1.04%)
Foetal Tone	100	Present 96 Absent 4	11(11.2%) 2(100.0%)	4 (4.08%) 2 (100.0%)	1 (1.02%)
Foetal Body Movements	100	Present 98 Absent 2	11(11.2%) 2(100.0%)	4 (4.00%) 2 (100.0%)	1 (1.02%)
Foetal cardiac activity	100	Present 100 Absent 0	13(13.0%) -	6 (6.0%) -	1 (1.00%)

With the absent foetal breathing movement (FBM) the evidence of foetal distress in labour and birth asphyxia was only 50% where as with the absent foetal tone (FT) and body movement (GBM) foetal distress and neonatal asphyxia was 100%.

FT and GBM has a better predictive value than foetal breathing movement. The low predictive value of FBM is probably explained by the need for extending the testing time upto 90-120 minutes.

The two patients who had loss of FT, GBM, FBM in the present study, were associated with subjective symptoms of Loss of foetal movement. Immediate intervention of pregnancy by caesarean was undertaken and the babies were asphyxiated but resusciated.

Table14 :Ultrasound parameters and its correlation with perinatal outcome

Ultrasound Parameter	Number of Patients	Evidence of foetal distress	5 minute Apgar <7	Perinatal mortality
Normal	49	3 (6.12%)	2 (4.08%)	-
Abnormal	51	10 (19.6%)	4 7.8%)	1 (1.91%)

There were 49 cases (49%) went into labour with normal biophysical scoring. 3 of them (6.12%) showed evidence of foetal distress in labour. 2 of the babies had an apgar score of less than 7 (4.08%). Specificity 89.7%.

In contrast from 51 cases with abnormal profile score , 14 had a feature considered as perinatal morbidity (sensitivity 27.5%).

The global predictive value of this test is 58.5% . In our study the amniotic fluid volume was the profile variable most able to identify the compromised fetus.

In 1981 **Phelan et al,** reviewed postdated pregnancies who underwent ante partum foetal surveillance with NST and amniotic fluid assessment, and such a surveillance resulted in a corrected perinatal mortality of 9 per 1000.[8,9]

Eden and colleagues 1982 used twice weekly nonstress testing and USG assessment of amniotic fluid volume. [10] Intervention was recommended on the basis of decreased amniotic fluid volume or non reactive NST. These authors noted a corrected perinatal mortality of 7 per 1000.

In the present study using amniotic fluid volume and other foetal biphysical activities for surveillance and monitoring the perinatal mortality was 10 per 1000.

Eden et al. 1988 found that a modified biophysical profile were only ultra sound parameters are evaluated (without NST) as in present study has found it to be equally reliable as other surveillance schemes.[11,12]

Obstetric Consequences Of Post Dated Pregnancy

In our hospital because of limitation of facilities only ultrasound parameters are evaluated to decide the mode and time of delivery. The timing of delivery also should be made on the basis of cervical status.

Induction of Labour

The criteria used for induction of labour in the present study was

- When all the variables by USG surveillance was normal and the cervix was favourable (Bishop score >7), where there is no good reason to prolong a pregnancy by vigorous criteria.
- When USG parameters are abnormal irrespective of the status of cervix (if Bishop score > 7 labour is induced with oxytocin, if Bishop score < 7 preliminary priming of the cervix with PGE_2 endocervical gel was undertaken.

Expectant Management

- When the USG parameters are normal and the cervix is unfavourable Bishop score <7, we would like to wait for the spontaneous labour or plan to induce labour when the cervix is ripe. The expectant management requires the evaluation of foetal jeopardy or well being with clinical assessment of liquor volume, daily foetal movement count chart (DFMC) and biweekly USG evaluation.

Table 15:Mode of delivery in the expectant group

Total Number of patients	Spontaneous	Induction	Caesarean Section	
			Elective	Emergency
51	15 29.4%	33 64.7%	1	2
			3 (5.8%)	

Among the 51 cases who underwent antepartum surveillance 29.4% delivered spontaneously 64.7% were induced 5.8% delivered abdominally.

The indication for caesarean section :

Elective :	Elderly primi with post dated Pregnancy	1
Emergency:	Foetal alarm signal	2

Table 16: frequency of induction

Total Number Patients	Total Number of Patients Underwent Induction	
	Oxytocin	PGE_2 gel
100	64 78.15%	18 21.9%
	82 82%	

Among the 100 cases, in 82 women labour was induced. Among them 78.15% were induced with oxytocin, 21.9% were induced with PGE2. Among the 18 cases where PGE2 endocervical gel used, 13 patients were followed by oxytocin infusion 24 hours later.

Table 17: Mode of delivery after induction

Total Number of Patients	Abdominal	Vaginal	
		Labour Natural	Instrumental
82	7 8%	65 86.6%	10 13.3%
		75 92%	

Among the 82 cases where the labour was induced 92% delivered vaginally and only 8% delivered by caesarean section. There was a slight increase in the incidence of instrumental deliveries (13.3%). 50% of the cases the indication for instrumental delivery was foetal distress.

The indication for caesarean section :
Foetal distress: 4
uterine inertia: 3

Table 18: Mode of delivery among the study group

Mode of Delivery	Labour Natural	Forceps	Total	%
Vaginal	78	11	89	89%
Abdominal			11	11%

Among the study group 89% delivered vaginally and 11% delivered by caesarean section. According to Tjokrodipo (1987) vaginal delivery could be expected in 82% prolonged pregnancies.[13]

Indication for caesarean Section

Total =11

1.	Foetal distress	7 (63.6%)
	Foetal distress during labour	5
	Foetal Alarm Signal	2
2.	Uterine inertia	3 (27.2%)
3.	Elderly primi with Post dated pregnancy	1 (9.0%)

The increase in the rate of caesarean section for foetal distress is justified to achieve good parinatal outcome.

According to Boyd and Usher (1988) vast majority of casearean section in prolonged pregnancy were done for 'failure to progress' although the risk of caesarean section because of foetal distress was also slightly increased.[14]

PRENATAL OUTCOME

Table 19 : Condition at birth

Condition at Birth	Number of Babies	%
Alive	100	100%
Dead born	-	-

Table 20 : Examination of the baby

Examination of Baby	Number of Babies	%
Loss of subcutaneous fat	12	12%
Meconium staining of cord and skin	9	9%
Normal	79	79%

Among the 100 babies, 12 babies showed wrinkling and loss of subcutaneous fat and 9 cases showed meconium staining of cord and skin. According to Cliffords criteria in the present study the evidence of post maturity is in 12% cases. The babies of Stage I (only loss of subcutaneous fat) were 3. Babies of Stage II (along with stage I meconium staining of foetal skin and umbilical cord) were 9.

Voherr 1975, Hombury et al. 1978 found that incidence of post maturity syndrome of 20 – 43% in post dated pregnancies.[15]

Table 21: Weight of the baby

Weight of the Baby	Number of Babies	%
2 - 2.5 kg	4	4%
2.6 – 3 kg	72	72%
3 – 3.5 kg	17	17%
Above 3.5 kg	7	7%

72% of the babies weighed between 2.6 – 3 kg, 7% weighed above3.5 kg.

Eden et al. 1987. There was a two fold increase of macrosomia (more than 4000g) compared with term infant. But in the present study the baby weighed maximum was only 3800 g.

Table 22: Length of the baby

Length of the baby (cm)	Number of babies	%
40-45	13	13%
45-50	55	55%
51-54	24	24%
55 and above	8	8%

Average Indian foetal length is 50-55 cms. In the present study the foetal length of 55 and above was found in 7% of cases.

According to Rathbun 13.2% cases were 55 cm and above.

Table 23: Perinatal morbidity

Complications	Number of Babies	%
Asphyxia	6	6%
Meconium aspiration	4	4%
Post asphyxic encephalopathy	1	1
Birth trauma (fractures or paralyses)	-	-

Asphyxia or depression at birth was defined as 5 minute apgar score less than 7 and the baby needed positive pressure bag and mask ventilation to initiate respiration. Moderate if for 3 minutes or less, severe if for more than 3 minutes.

Meconium aspiration syndrome was diagnosed when any degree of respiratory distress and abnormal radiographic findings followed delivery and when meconium was present in amniotic fluid.

Post asphyxic encephalopathy included abnormalities in tone or neurologic state including convulsions which occurred during the first days of life after perinatal asphyxic insult.

Birth trauma included fractures(Clavicular) or paralyses(Brachial plexus) the latter of which often resolved quickly.

Table 24: Perinatal mortality

Total Number of Cases	Perinatal Mortality	%
100	1	1

The present study neonatal asphyxia was found in 6% of the cases. The number of pregnancies complicated by evidence of foetal distress was 13 and among them 4 babies had meconium aspiration.

Eden et al. found that asphyxia was significantly more common in post term infants.[16] usher et al. (1988) found that meconium release was twice as common in prolonged pregnancies.

The perinatal mortality in the present study was 10 per 1000.

SUMMARY

Socio **epidemiological factors** among the study group (100 cases) 68% of women was between 21-30 years. 44% were pimigravida. 72% of the cases were in the income group of Rs.3000 to 4000 per month. 12% of the cases gave history of consanguineous marriage.

Incidence : About 36% of the cases had completed 41 weeks gestation and 49% completed 42 weeks and in 15% the pregnancy was beyond 42 weeks.

Ultrasound evaluation : There was a progressive decline in the amniotic fluid volume after 40 weeks gestation. The liquor was normal in 77.7% of cases and diminished in 5.5% at 41 completed weeks where as it was normal only in 26.6% of cases and diminished in 33.3% of cases after 42 weeks.

There was an inverse relationship of gestational age and placental grading. Grade II placenta was 88.8%, 75.5%, 46.6% in 41, 42 completed weeks, more than 42 weeks respectively. Grade III placenta was found 11.1%, 24.4% and 53.3% at 41,42 and more than 42 weeks of gestation respectively.

Foetal biophysical activities were normal in most (98%) of cases.

Obstetrical Consequences in Prolonged Pregnancies among the 100 cases delivery was spontaneous in 15%. Induction of labour was done in 82% of cases, delivered vaginally l(82%) and 11% of cases by caesarean section. The prime indication (63.6%) for caesarean section in the study group was foetal distress. The other indication were elderly primi and uterine inertia. The caesarean section rate was 8% among the induced group.

13% of cases were complicated by evidence of foetal distress during labour.

Perinatal Outcome : Among the 100 babies born all babies were born alive. 6 babies were asphyxiated, 4 showed meconium aspiration syndrome. There was one perinatal death after 26 hours of birth in the neonatal unit due to post asphyxic encephalopathy.

The baby showed evidence of post maturity syndrome was 12%. No case of foetal macrosomia was found among the 100 cases.

Perinatal Morbidity is increased with increasing gestational age of pregnancy – women went into labour with abnormal ultrasound parameter – related to amniotic fluid volume, placental grading and foetal biophysical activities.

The **perinatal mortality** in the present study was 10 per 1000.

CONCLUSION

Post mature pregnancy is a complex perinatal problem and ranks as a major source of perinatal morbidity and mortality, among term pregnancies. To improve the outcome attempts should be made to determine the estimated date of confinement in all pregnancies before the third trimester by emphasizing the early and regular antenatal check up. Antepartum surveillance should be performed in all pregnancies that might have reached 42 weeks of amenorrhoea.

By routine intervention we find to dismiss our clinical watchfulness. The real task is to try to discover those few fetuses which suffer from poor supply line and to save them before they are permanently damaged or dead. This is truly difficult bit application of a set of simple rules is essential.

Emergence of improved antepartum testing and effective cervical ripening agents (Prostaglandins and relaxin) may improve the outcome and management of post dated pregnancies.

During the intrapartum period special attention should be paid to careful foetal monitoring. Anticipation for the complication and proper management of the baby in the neonatal unit goes a long way to improve the outcome in post dated pregnancy.

REFERENCES

1. David C. Lagrew and Roger K. Freeman M.D. Management of Post date pregnancy. Am. J. Obst. & Gynac 1986 : 154 : 8-13.
2. Eden et al. Comparison of antepartum testing schemes for the management of post date pregnancy. Am. J. Obst. & Gynac 1982 : 144 :758.
3. Francis H. Mc. Lean, Mark E. Boyed Rober H. Usher. Am. J. Obst. & Gynaecol. 1991 : 164 619-24.
4. Fischer RL. Kuhlman KA. Obstet. & Gynac. 1991 : 78 : 363 – 8. Doppler evaluation of umbilical and uterine arcuate arteries in post date pregnancy.
5. Frank A. Manning, M.D. Obstetrics and Gynecology. Clinics of North America. Vol.17/March 1990.
6. Antepartum foetal surveillance.Grannum P.A. Clinics in Obst. & Gynac. Volume 10 : 3 1983.Page 459.
7. Herabutya Y. Prasertswat, P. Prolonged pregnancy the management dilemma. Int. J. Gynae. & Obstet. 1992, April : 37 : 253-8.
8. I an Donald. Practical obstertrical problems.Jim enez solis, Barraza Espinoza. Biophysical profile in prolonged pregnancy. Another alternative to foetal suveillance.John Studd. Progress in Obstetrics & Gynaecology. Vol.7 and Vol.5.
9. Lewis Shenkar M.d., Kathryn L. Reed M.D., Significance of oligohydramnios complicating pregnance Am. J. Obst. & Gyn. 1991 : 164 : 1597-600
10. Mark E. Boyd. M.D., Robert H. Usher M.D. Obsteric consequence of post maturity. Am. J. of Obst.& Gynae. 1988, 150 : 334 – 8.
11. Pollack RN. Haull Pollack G. Macrosomia in post dated pregnancies. Am. J. Obst. & Gynae. 1992. Jul 167 : 7-11.
12. Phelan JP. Amniotic fluid assessment by four quadrant technique. Report Med 32 : 540.
13. Rajini Goyal, Kamala and N.C. Gupta. Journal of Obst. & Gynae of India. Vol. 37 Oct. 1987.
14. Robert Husher MD, Mark Boyd MD. Assessment of fetal risk in prolonged pregnancies. Am. J. of Obst. & Gynae. 1988 : 158 : 259 – 264.
15. Vintzilleos AM, Campbell WA. Obst. & Gynae. 1983 : 62-71.
16. Votta RA et al. Active management of prolonged pregnancy. Am. J. of Obst. & Gyane. 1993 Feb. 168 : Williams' Obstetrics – 18th edition.