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Factors Associated with Successful Vaginal Birth after Caeserean

Nacharaju Madhavi, Vellanki Venkata Sujatha Ms Micog, Singh Sapna, Verapeneni Lavanya & Mandava Sushma

Kamineni Institute of Medical Sciences, India

Abstract - *Objective:* To analyse the success of vaginal delivery after caesarean birth [VBAC].

Methods: A retrospective analysis of number of cases delivered vaginally after previous caeserean delivery at our hospital was done from January 2012 to December 2012. The analysis was done regarding the parameters affecting the success of VBAC. Factors like age of mother, gestational period, and indication for previous caesarean section, mode of delivery, birth weight of the baby and maternal complications encountered were analysed.

Results: A total of twenty patients delivered vaginally after previous caesarean section. It was observed that successful VBAC was possible in young age group with spontaneous labour at term who underwent caesarean section in previous delivery for a non recurrent indication.

Conclusion: Careful selection of the patients increases the success rate of VBAC.

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Factors Associated with Successful Vaginal Birth after Caeserean

Nacharaju Madhavi [α], Vellanki Venkata Sujatha Ms Micog [σ], Singh Sapna [ρ], Verapeneni Lavanya [ω] & Mandava Sushma [¥]

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I. Introduction

There is a constant increase in caesarean section rate for varied indications. Though the safety of caesarean section has improved till date the morbidity rates are still high in comparison to the vaginal delivery. Associated morbidities like abnormal placentation, post operative pain, infection, long hospital stay are still rampant even after advancements in operative techniques and broad spectrum antibiotics. On the other hand a patient undergoing vaginal delivery after previous caesarean section has the risk of uterine rupture and fetal death. Cases of failed VBAC were associated with higher uterine rupture. [1] Even in the presence of electronic fetal monitoring and facilities for emergency caesarean available there was uterine rupture in 1 out of 25. [2] The rates of hysterectomy and thromboembolic complications are less in VBAC patients than those undergoing caesarean section. [3] Another study in Indian set up favored VBAC in patients for non recurrent indications. [4] The debate is still going on, and so is the research. There is a definite need to bring down the caesarean section rate either by judiciously selecting the patients for primary caesarean section or by attemptingvaginal delivery following previous caesarean section. Similarly patient is to be assessed prior to VBAC so as to increase the probability of success of vaginal delivery.

A successful VBAC has distinct advantage over repeat caesarean section by decreasing the operative mortality and morbidty as well as bringing down the length of stay and the expenses [5]. Extensive research is done to identify the factors influencing the success of VBAC, its morbidities and risks of uterine rupture. Of these factors strongly influencing are prior VBAC, prior caesarean section for non recurrent indication, Bishop score of more than 4 and spontaneous onset of labour.[6] While factors against the success are induction/augmentation, previous caesarean for recurrent cause (CPD, dystocia), non reassuring fetal heart at the time of admission. A similar observation that Bishop score and number of previous caesarean section influenced the success of VBAC. [7] Maternal age <30yrs, fetal weight between 2.5kg to 4kg and term gestation were associated with successful VBAC. [8]

It is also observed that the risk of uterine rupture increases with poor Bishop score and induction with Prostaglandins and a combination of both.(9) while spontaneous onset of labour is associated with successful VBAC.

Z. Ghaffari[10] et al observed that the rate of vaginal delivery was higher in patients with previous caesarean section was than in patients with prior vaginal delivery. They strongly suggest that patients with previous caesarean section should be allowed for VBAC.

II. Methods

A retrospective analysis of number of cases delivered vaginally after previous ceserean delivery at our hospital was done from January 2012 to December 2012. The analysis was done regarding the parameters affecting the success of VBAC. Factors like age of mother, gestational period, and indication for previous caesarean section, mode of delivery, birth weight of the baby and maternal complications encountered were analysed.

III. Results

A total of twenty patients delivered vaginally after previous caesarean section. Thirteen out of twenty

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patients were young between 21-25 years of age while seven patients were between 26-30 years of age. No patients were beyond 30 years of age. Patients of young age group had successful VBAC when compared to older patients. [Table1] Majority of the patients who delivered vaginally after previous caesarean section reached term gestation. Fifteen out of twenty patients delivered were of term gestation while only five patients were preterm. Term gestation is a favourable factor for successful vaginal delivery. [Table2] Analysis of various indications for previous caesarean sections was done. It was observed that majority of indications were nonrecurring. Of all 20 cases section was performed for Premature rupture of membranes [PROM] in 8 cases and fetal distress was indication next to PROM in 7 cases. Caesarean section was performed for pregnancy induced hypertension [PIH] and cephalopelvic disproportion [CPD] in 2 cases each. It is obvious that the success of VBAC depends on the previous indication and nonrecurring indication is its corner stone. [Table3] 18 out of 20 patients delivered spontaneously while only two of them required outlet forceps delivery. VBAC does not affect the mode of delivery and patients can deliver spontaneously without much intervention.

14 babies weighed more than 2.5 kg at birth. Large sized babies do not affect the vaginal delivery after caesarean section.

Out of 20 patients only one patient who delivered spontaneously had scar rupture and the baby had mild asphyxia. Scar rupture was diagnosed after the delivery of the baby as abdominal distension and ultrasound showed free fluid in the abdomen which was managed conservatively as patient was haemodynamically stable. Baby was resuscitated immediately. Both mother and baby were discharged in healthy condition.

IV. Discussion

In this era of high caesarean section rate which is associated with relatively higher morbidity and mortality it is challenging to the obstetrician to cut down this rate Mc Mahon and Luther et al [1] concluded that the risks of repeat caesarean section are higher (abnormal placentation, hysterrectomy, maternal mortality). While Flamm and Goings et al [5] found that repeat caesarean section and trial of labour are associated with equal risks while the cost of trial of labour is less if the probability of successful trial of labour is more than 0.7. Conducting VBAC in carefully selected patients comes as a rescue in bringing down the number of caesarean sections. This retrospective analysis asserts the same where a careful selection and careful monitoring of the patient with previous caesarean section can result in a successful vaginal delivery.

All the patients analyzed had spontaneous onset of labour. Induction of labour is associated with higher rates of uterine rupture when compared to spontaneous onset of labour.[9] Farmer et al [11] and wing et al,[12] in two different studies found a higher incidence of uterine rupture in cases induction with misoprostol. It is observed that woman with age of 21-30 years are likely to deliver vaginally [8] which is consistent with the observation made by Cameron et al. While selecting the patients it is important to consider maternal age. It is also observed that gestational age at the time of delivery in most of the cases was full term.[8] Quinones and stamilio et al [13] observed that VBAC was successful in preterm cases. Majority of indications for previous caesarean section were non recurrent (fetal distress, PROM). It is consistent with the findings of Wing and Paul et al, [12].This emphasizes that for a successful VBAC the previous indication for caesarean section should be carefully evaluated and patients with non recurrent indications should be recruited for vaginal delivery. Fetal weight upto 3.5kg is not a hurdle for successful VBAC as it is observed that babies with birth weight 3.5kg delivered vaginally.[8] ACOG guidelines[14] states that the risk ofuterine rupture is increased when the fetal weigh is more than 4kg. Hence with a proper pelvic assessment and monitoring of progress of labor, good sized babies can also be delivered vaginally. Out of all the 20 patients scar dehiscence was encountered in one patient who was managed conservatively (11). This reflects that the incidence of complications is less in carefully selected and monitored patients and severity of complications also are less which can be managed conservatively.

V. Conclusion

VBAC definitely reduces the caesarean section rate and thus its associated morbidity and mortality. Careful selection of patients is the corner stone of successful VBAC with special consideration of maternal age and gestational period. A nonrecurring indication for previous caesarean section and spontaneous onset of labour are key factors for the success of VBAC. Fetal weight up to 3.5kg is not risk factor if there is no cephalopelvic disproportion. The incidence of complications and their severity are reduced with proper selection.

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Table 1 : Distribution of the patients in relation to age

Age of the mother(in years)	Number
21-25	13
26-30	7
31-35	-
>36	-

Table 2 : Distribution in Relation to Gestational Age

Gestational age (weeks)	Number
28-37	5
37-41	15
>41	-

Table 3 : Indications for previous caesarean section

Indication for caesarean section	Number
PIH	2
Fetal distress	7
PROM	8
CPD	2
Absent fetal movements	1

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Termination of Pregnancy in a Tertiary Hospital Setting, a Holistic Review of Various Factors

By Dr. Shaifali Patil, Dr. Nimain Mohanty, Dr. Nidhi Kurkal, Dr. Rama Borse, Dr. Prasad Deshmukh & Dr. Pooja Vyas

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Abstract - Medical Termination of Pregnancy is today treated as a convenient method of family planning. However the negative aspects have become more obvious in the following years. The desire for a male child exists in most sections of Indian society, irrespective of the socio-economic status which has reemphasized the misuse of MTP and the act.

Aims and

Objectives: To determine various criteria's for termination of pregnancy in a tertiary health centre, the acceptance of contraception and the opinion of women on the legalization of prenatal sex determination.

Materials and Methods: This was a cross sectional study conducted in MGM Medical College and Hospital, Navi Mumbai, Maharashtra, India, including 200 patients who attended the OPD for MTP over a period of 1 year

Discussion: Abortion has been and continues to be one of the most widely employed methods of fertility control in the world.

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TERMINATIONOFPREGNANCYINATERTIARYHOSPITALSETTINGAHOLISTICREVIEWOFVARIOUSFACTORS

Strictly as per the compliance and regulations of:

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Dr. Shaifali Patil [α], Dr. Nimain Mohanty [σ], Dr. Nidhi Kurkal [ρ], Dr. Rama Borse [ω], Dr. Prasad Deshmukh [¥] & Dr. Pooja Vyas [§]

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Materials and Methods: This was a cross sectional study conducted in MGM Medical College and Hospital, Navi Mumbai, Maharashtra, India, including 200 patients who attended the OPD for MTP over a period of 1 year

Discussion: Abortion has been and continues to be one of the most widely employed methods of fertility control in the world. A growing number of studies provide direct and indirect estimates of the incidence of sex-selective abortions ranging from 3-17% over different reference periods, i.e. two years preceding the survey to lifetime.

Conclusion: Among the entire criterion, it was found that the effect of age, gravid status, parity and number of female offsprings significantly affected the reasons for termination of pregnancy.

I. Introduction

The most important social event in the lives of most people is the birth of their own child. Despite the advances in the modern world, even today, for many women in developing nations, the sole purpose and meaning of their existence is associated with motherhood. Societal goals of reducing poverty, maternal and infant mortality, unwanted births and abortions are all affected by control of fertility.

Before the Medical Termination of Pregnancy (MTP) Act, an unwanted pregnancy in both the rural as well as urban parts of the country was managed by resorting to illegal abortion, infanticide, or abandonment of the neonate. Medical Termination of Pregnancy has today become a way of life and unfortunately has been accepted worldwide as a convenient mode of temporary contraception. The Indian Parliament liberalized the abortion laws of the country due to the socio-economic necessity. MTP is a great social boon to women and their affected families as it does not destroy their social future as would otherwise happen in conservative societies.

Patterns of sexual and reproductive behavior in India have changed significantly over the years. However, out of wedlock births are still considered a taboo. Family planning services were available long before the legalization of the MTP act in India. Although the community accepted these methods due to various government incentives, the awareness of contraception in the country in the lower classes of society and adolescents is yet to improve. With the MTP act being implemented, it was feared that it would be used as an alternative to family planning methods.

MTP services are available today even in the most remote areas of the country. However the negative aspects became more and more obvious in the following years. The mentality of the desire for a male child existed in most sects of Indian society irrespective of the socio-economic state. The rates of sex selective abortions and female foeticide increased dramatically with the advent of ultrasonography. The Government thus introduced the Pre Conception and Pre Natal Diagnostic Techniques Act in 1994(PCPNDT) and made the prenatal ultrasound diagnosis of sex determination illegal.

Unfortunately illegal MTPs and prenatal sex determination continues to be carried out widely by untrained and unlicensed hands in spite of the Government and social organizations efforts against this obnoxious practice.

II. Aims and Objectives

1. To determine various criteria's for termination of pregnancy in a tertiary health centre.
2. To see the role of contraception as a method of or prevention of conception
3. To determine if termination is used as a mode of contraception
4. To determine if knowledge of foetal sex would have changed the decision to terminate pregnancy
5. To determine if sex of living issues affected the decision of termination of pregnancy
6. To know if sex determination was done in any one of their prior pregnancies
7. To know the patient's preference for sex determination

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8. To know the effect of education, socio-economic status and marital status on contraception and opinion on termination of pregnancy if male/female child in utero.

III. Materials and Methods

- This was a study conducted in MGM Hospital, Kamothe, Navi Mumbai
- The study included 200 patients
- All the patients who attended outpatient services for MTP were included in the study
- This was a cross-sectional study
- The Stratified Random Sampling Method was used for patient selection

All the patients who attended our outpatient services as well as the indoor patients who were admitted for MTP regardless of mode of contraception or no contraception after termination of pregnancy were selected. The selection criteria were not dependant on age, education, socio-economic status or marital status.

IV. Observations and Statistical Analysis

1. Reasons for termination of pregnancy
2. Social
3. Spacing
4. Failure of Contraception
5. Financial
6. Maternal Disease
7. Rape
8. Mental Reasons
9. Foetal Reasons

In our study we found that financial reasons were the most common reason for termination of pregnancy overall. Among all parameters, the reasons for termination of pregnancy between 20-29 years of age, 36.1% were financial followed by spacing, between 30-39 years as well as above 40 years of age was financial (48.4%, 41.7% respectively). Below the age of 20 years 40% of the reason was due to rape and another 40% was due to social reasons. Foetal anomalies accounted for only 0.3% of all the pregnancies terminated. Comparing the gravid status, the subjects who were 3rd gravida had a maximum termination (40.4%) followed by the 2nd gravida (29.4%). Among primigravidas, 60% of the subjects gave social reasons as the explanation for opting for MTP, 48.5% for spacing in gravida 2, and for financial reasons in gravida 3, 4 and beyond (43.9%, 49.3% and 44.4%). Primipara women mostly opted for MTP for spacing (45.1%), 46.5% and 57.7% of second and third parity women gave financial reasons. In our study we found that age, gravid status as well as parity significantly affected the reasons she opted for medical termination of pregnancy.

We also compared the acceptance of contraception and we found it to be significantly associated with the level of the patients education with 71.4% of the subjects educated beyond the secondary level who accepted contraception as compared to 30.8% of the uneducated subjects who did so. We also considered the opinion of all the women regarding legalization of sex related termination of pregnancy and the only parameter that was significant was parity with women who were primiparous maximally opined that they would opt for termination if the foetus was female in contrast with those with 3rd parity who were indifferent in 85.7%.

V. Discussion

Abortion has been and continues to be one of the most widely employed methods of fertility control in the world1, 2. Today 6 out of 10 of the world's population live in countries where abortion is available 'on request' during the first trimester or where the language of the law encourages broad liberal interpretation. It was found that in cases of multiple repetitive abortions there was ambivalence towards contraception3. Pregnancy always is not synonymous with a desire for motherhood. It could be a neurotic expression full of guilt that shows that these women did not overcome a childish rivalry with their mothers.

The first country to make abortions available for social reasons was the USSR in 19204. Gradually over the years abortion laws became more and more liberalized. In India, The Medical Termination of Pregnancy Act was enforced from 1st April 1972. Prior to this women resorted to illegal and unsafe methods to abort their pregnancies by unwarranted hands leading case of foetal anomalies which are incompatible with life, the act permits termination upto 20 week of gestation albeit only after the opinion of two qualified registered medical practitioners5,6. However access to safe abortion services remained limited for the vast majority of Indian women, particularly in rural areas. An overwhelming proportion of induced abortions (6.7 million annually as per indirect estimate7) take place in unauthorized centers, which provide abortion services of varying degrees of safety. Thus the act was amended on 2002 in which the authority for approval of registration of MTP centers has been decentralized from the state to the district level 8, 9. In the year 2003, the Government introduced a further amendment to MTP to a very high rate of morbidity as well as mortality due to the complications of septic abortions. The MTP act in India in a nutshell gives the liberty to every woman who is above 18 years and of sane mental constitution to legally opt for termination of pregnancy within 12 weeks of gestation on the grounds of failure of contraception, financial reasons, alleged rape, if the fetus is incompatible with life or if the pregnancy causes mental or physical anguish to the mother or in cases where the

husband to terminate her pregnancy. The Act defines the place and the requirements of the medical practitioner who can terminate her pregnancy and in pregnancy causes deterioration of the maternal physical condition. A woman need not take the consent of her

Table 1: Among all the criterion, it was found that the effect of age, gravid status, parity and the number of female offsprings significantly affected the reasons for termination of pregnancy

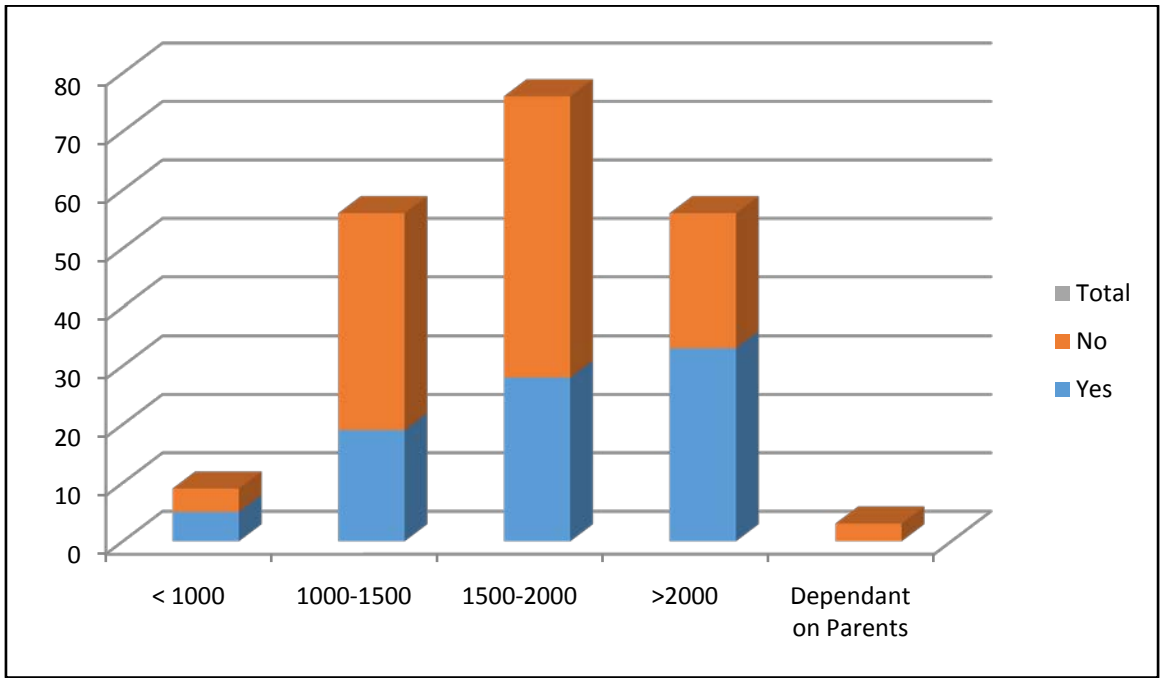
Parameters	1	2	3	4	5	6	7	8	P Value
Age	<20 yrs 2/5	20-29 yrs 79/233	20-29 yrs 12/233 (5.2%)	30-39 yrs 44/91	≥ 40 yrs 3/12 (25%)	<20 yrs 2/5 (40%)	30-39 yrs 2/91	20-29 yrs 1/233 (0.4%)	0.035
Gravid Status	1 9/15 (60%)	2 49/101 (48.5%)	3 9/139 (6.5%)	4 35/71 (49.3%)	3 33/139 (23.7%)	1 3/15 (20%)	3 3/139 (2.2%)	3 1/139 (0.7%)	0.0000 235
Parity	>3 7/52 (13.5%	1 55/122 (45.1%)	2 11/149 (7.4%)	>3 30/52 (57.7%)	2 32/149 (21.5%)	0	1 3/122 (2.5%)	1 1/122 (0.8%)	4.64^{-7}
H/o previous abortions	MTP 3/33 (9.1%)	SA 12/46 (26.1%)	MTP 3/33 (9.1%)	MTP 14/33 (42.4%)	SA 12/46 (26.1%)	0	SA 2/46 (4.3%)	SA 1/46 (2.2%)	0.389
No. of male offsprings	2 3/38 (7.9%)	1 55/185 (29.7%)	1 10/185 (5.4%)	2 20/38 (52.6%)	2 10/38 (26.3%)	0	1 1/185 (0.5%)	1 1/185 (0.5%)	0.079
No. of female offsprings	>2 2/11 (18.2%	1 54/174 (31%)	>2 1/11 (9.1%)	2 28/58 (48.3%)	>2 3/11 (27.3%)	0	1 4/174 (2.3%)	0	0.032
Socio-economic Status ($/year)	<1000 4/15 (26.7%)	1000-1500 29/93 (31.2%)	<1000 1/15 (6.7%)	<1000 7/15 (46.7%)	1500-2000 26/123 (21.1%)	1000-1500 1/93 (1.1%)	<1000 1/15 (6.7%)	>2000 1/111 (0.9%)	0.706
Educational Status Primary – 10th grade Secondary – 12th grade	Primary 6/60 (10%)	>Secondary 5/11 (45.5%)	>Secondary 1/11 (9.1%)	Uneducated 78/169 (45.9%)	Primary 16/60 (25%)	Primary 2/60 (3.33%)	Uneducated 5/169 (2.9%)	Secondary 1/104 (1%)	0.121

a) Acceptance of Contraception

Table 2

Socio Economic Status ($/annum)	Yes	No	Total
≤ 1000	5(55.6%)	4(44.4%)	9(4.5%)
1000-1500	19(33.9%)	37(66.1%)	56(28%)
1500-2000	28(36.8%)	48(63.2%)	76(38%)
>2000	33(58.9%)	23(41.1%)	56(28%)
Dependant on Parents	0	3	3(1.5%)
Total	85(43.1%)	112(56.9%)	200

Figure 1



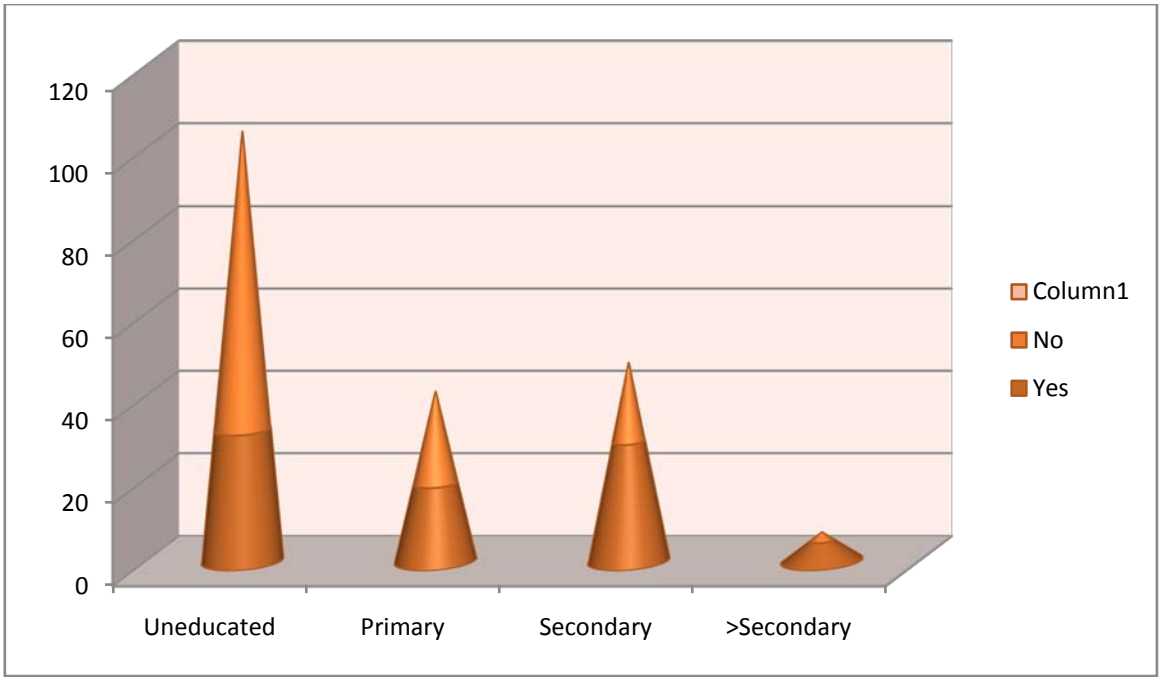
p-0.099 (not significant)

b) On the basis of educational status

Table 3

Education	Yes	No	Total
Uneducated	32(30.8%)	72(69.2%)	104(52%)
Primary	19(46.3%)	22(53.7%)	41(20.5%)
Secondary	29(60.4%)	19(39.6%)	48(24%)
>Secondary	5(71.4%)	2(28.6%)	7(3.5%)
Total	85(42.5%)	115(57.5%)	200

Figure 2



P = 0.00199% (highly significant)

c) Opinion on sex related termination of pregnancy

Table 4

Would Terminate if	Female	Male	Indifferent	P Value
Gravid Status	2 26/59 (44.1%)	3 5/77 (6.5%)	1 10/10 (100%)	0.129
Parity	1 29/68 (42.6%)	2 5/83 (6%)	≥3 30/35 (85.7%)	0.008
No. of male offsprings	1 29/112 (25.5%)	2 2/20 (10%)	2 16/78 (80%)	0.201
No. of female offsprings	2 15/34 (44.1%)	≥2 1/6 (16.7%)	2 19/34 (55.9%)	0.262
Socio-economic Status ($/year)	1000-1500 23/56 (41.1%)	>2000 4/56 (7.1%)	1500-2000 53/76 (69.7%)	0.335
Educational Status Primary – 10th grade Secondary – 12th grade	Primary 16/35 (45.7%)	Uneducated 5/102 (4.9%)	Secondary 39/57 (68.4%)	0.412

Rules which has rationalized the criteria for physical standards of abortion facilities.

Yet another obstacle faced was the sex discrimination in India. The desire for a male child is unfortunately yet very prevalent. With the practices of dowry among other things, a female child is supposed to be a burden to society whereas a male child is assumed to give security to the family10. This bias manifests as neglect of girls and women resulting in their early death 11, 12, 13, female infanticide 14, 15 and more recently, antenatal sex determination and female feticide16.

The Pre-natal Diagnostic Techniques (Regulation and Prevention of Misuse) (PNDT) Act that made antenatal sex determination and sex selective abortion illegal in India, was passed in 1994. It came into effect in 199617. Amendments have also been introduced in the PNDT Act of 1994 which was necessitated as the PNDT Act had failed to curb the practice of testing for sex determination and consequent sex-selective abortion in the country18. With the recent amendment to the PNDT Act, preconception and pre-implantation procedures for sex selection are banned in the country. The Amendment stipulates compulsory maintenance of written records by diagnostic centres/ doctors offering sonography service. Local authorities have also been given powers to ensure the enforcement of the Act19. However the sex ratio in India has continued to fall as evidenced in the 2011 Indian Census. The number of girls per 1000 boys dropped from 927 in 2001 to 914 in 2011 for children aged 0-6 years; most notably in the state of Maharashtra, which recorded a decline in the sex ratio from 913 in 2001 to 883 in 201120.

According to WHO, in countries where contraception was widely available such as England and Wales, USA and the Netherlands, almost half of the abortions are in women less than 25 years of age whereas in those nations with no tradition of contraceptive use, and with limited availability of contraception, and sterilization, the women were above 35 years of age 21. A survey done in West Bengal, India22 revealed that the maximum number of MTPs was done in the age group of 25 – 29 years (10263/48635) followed by those 30 – 34 years and 20 – 24 years and the least number in the age group over 45 and less than 15 years.

A growing number of community- and facility based studies provide direct and indirect estimates of the incidence of sex-selective abortions. A number of studies in different parts of India report a prevalence of sex-selective abortion ranging from 3-17% over different reference periods, i.e. two years preceding the survey to lifetime23-26. Facility-based studies report a much higher prevalence, for example, two in five women with one or more daughters, but no living sons had had an abortion in a Patiala (Punjab, India) hospital27.

The most common reasons for MTP is either financial or an unplanned pregnancy28. Several other studies indicate that most abortions are sought to limit family size or space the next pregnancy23, 24.

The acceptance of contraception too has been found to be associated with the level of the woman's education as well as the previous number of male issues. If a male child was among the living issues, contraception was accepted and used earlier29. Fertility and contraceptive use in developing countries are associated with various markers of socioeconomic status, the most prominent of which is women's education30, 31; the well documented link between female education and use of contraception plays an important role in development of family planning policies in lower income countries.

In parts of South Asia, and elsewhere, women have a considerably lower social status and autonomy than men31, 32, and their low status and autonomy seems to be associated with lower fertility control. Several reports showed a positive association between women's autonomy and contraception use33,34. Improving women's education has been seen one way to increase their status and autonomy, and it has been proposed that autonomy acts as a mediator of the link between education and contraception use 31, 35.

VI. Conclusion

Our study revealed that factors like the woman's age, her gravidity, parity, the sex of her offsprings as well as the number of living issues she had significantly affected her decision and reasons for termination of her pregnancy. Education played a significant role in the acceptance of contraception of a woman whereas the number of living issues she had did affect her opinion on the legalization of sex determination antenatally. Adolescent pregnancy termination in Indian society was highly influenced by the marital status of the patient. As evident in the study, all the adolescent pregnancy termination were in those who were unmarried. The thirst of the male child continues to dominate our society. Even one living male child boosted the decision of termination of pregnancy in contrast to couples with only female issues who were hesitant to undergo an abortion.

There was a marked increase in the percentage of contraceptive use by raising the standard of living with the help of proper education thus decreasing the incidence if termination of pregnancy as already evidenced in developed countries.

The preference of a male child still prevails widely over most parts of the country leading to the obnoxious and illegal practice of female feticide. Financial instability is yet the commonest cause for medical termination of pregnancy followed by spacing.

It is not one factor alone that determines the cause but a combination of factors which influence each other as well as drive a woman to opt to terminate her pregnancy.

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Early Suspicion of Vasa Previa with Velamentous Umbilical Cord Insertion and Low Laying Placenta and its Management

By Natasha Gupta Md, Mina Tirabassi Rdms, Jeff B Chapa Md, Ori Kushnir Md & Josef Blankstein Md

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Abstract - We present a case of a 34 years old female who was suspected to have vasa previa due to sonographic evidence of low lying placenta and velamentous cord insertion, early in the pregnancy. Vasa previa can lead to significant perinatal morbidity by causing fetal exsanguination, if diagnosis is delayed. This case demonstrates the need for early suspicion of vasa previa in presence of persistent high risk features on repeated ultrasounds, importance of patient preparation with antenatal steroids as well as comprehensive education of patient regarding the warning signs and symptoms.

GJMR-E Classification : NLMC Code: WQ 210, WQ 212

Strictly as per the compliance and regulations of:

Early Suspicion of Vasa Previa with Velamentous Umbilical Cord Insertion and Low Laying Placenta and its Management

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Abstract- We present a case of a 34 years old female who was suspected to have vasa previa due to sonographic evidence of low lying placenta and velamentous cord insertion, early in the pregnancy. Vasa previa can lead to significant perinatal morbidity by causing fetal exsanguination, if diagnosis is delayed. This case demonstrates the need for early suspicion of vasa previa in presence of persistent high risk features on repeated ultrasounds, importance of patient preparation with antenatal steroids as well as comprehensive education of patient regarding the warning signs and symptoms.

I. Case Presentation

A 34-years old female, gravida 2, para 1, presented at 32.5 weeks gestation with complaints of contractions every 2 minutes. She denied any vaginal bleeding or leakage of fluid. She was being closely followed for low lying placenta and velamentous insertion of umbilical cord, with serial ultrasounds. Her sonogram at 20.2 weeks showed an anterior, low lying placenta. A follow up ultrasound at 24.2 weeks noted anterior, marginal placenta. A transvaginal sonogram at 29.5 weeks revealed anterior marginal placenta with suspicion for funic presentation (FIGURE A). Color flow mapping was suggestive of velamentous cord insertion with suspicion for vasa previa (FIGURE B).

Patient was administered a course of steroids in preparation for preterm delivery for suspected vasa previa. She also received instructions to return to hospital in case of leakage of fluid or vaginal bleeding. An ultrasound at 31.2 weeks again noted velamentous cord insertion, with vessels seen coursing the membranes in close proximity of internal cervical os, thus providing strong suspicion for previa. Patient returned to labor and delivery with frequent contractions and was delivered with Cesarean section to prevent fetal head compression of vessels or their rupture from uterine contractions. Placental inspection confirmed the diagnosis of velamentous insertion and vasa previa. Infant with APGAR scores of 7 and 7 at 1 and 5 minutes respectively was born. Baby was admitted to neonatal intensive care unit (NICU) for further care, did not require transfusion and was discharged after 15 days stay in NICU. Mother and baby continued to do well on their follow up.

II. Discussion

Vasa Previa is an uncommon obstetric complication where fetal blood vessels travel the membranes covering the internal cervical os, in front of the fetal presenting part [1]. Type 1 vasa previa is associated with velamentous umbilical cord insertion, where cord is inserted marginally into the placenta and lacks the protective covering of Wharton's jelly around it, such that umbilical vessels are covered only by the membranes [1]. These vessels are prone to rupture and compression with onset of labor and with rupture of membranes. Type 2 vasa previa is seen in association with bilobed placenta or placenta with a succenturiate lobe, where fetal vessels travel the membranes connecting 2 lobes of placenta or those connecting placenta with its accessory or succenturiate lobe. The incidence of vasa previa is 1 in 2500 in United States.

Risk factors for vasa previa include placental and cord abnormalities like velamentous insertion of umbilical cord [2], bilobed placenta, placenta with succenturiate or accessory lobe, low-lying placenta or placenta previa as well as multifetal pregnancies and pregnancies following in vitro fertilization[3]. It is essential to identify vasa previa in a timely manner since onset of labor or premature rupture of membranes results in rapid fetal exsanguination causing feta anemia, hypotension and demise within

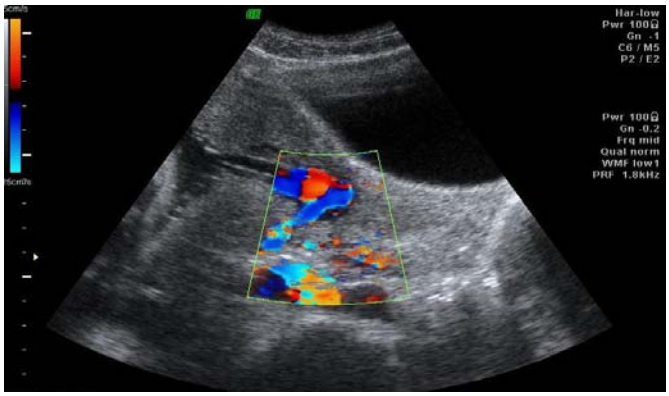

Figure A : Transvaginal Scan showing anterior marginal placenta with funic presentation.

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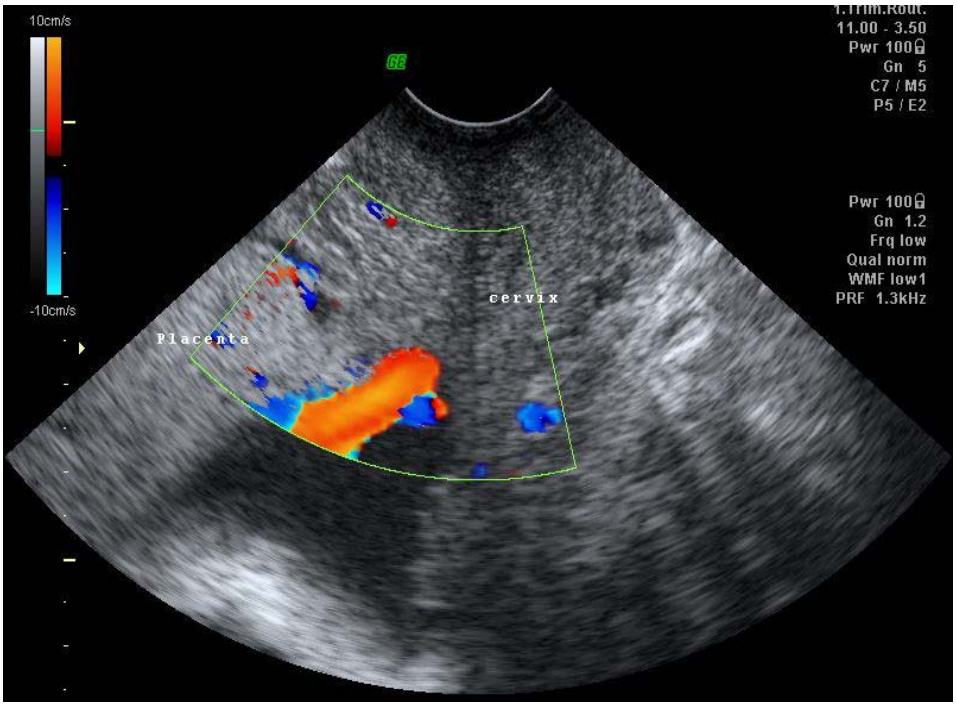

Figure B : Color flow mapping depicting velamentous cord insertion with suspicion for vasa previa

minutes[3]. Due to lethal nature of this rare condition, several authors recommend early prenatal diagnosis of vasa previa by using color flow mapping in second trimester, especially in patients with risk factors[4]. Color flow imaging is popularly employed for the purpose of identifying umbilical cord and placental pathologies as compared to Gray scale imaging alone. Nomiyama et al reported 100% sensitivity of color Doppler imaging in identifying velamentous cord insertion, when performed routinely between 18-20 weeks gestation[5]. They proceeded to identify vasa previa in the patients that were noted to have velamentous cord insertion on color doppler imaging and they concluded that color doppler had 100% sensitivity, 99.8% specificity, 83% positive predictive value and 100% negative predictive value in identification of velamentous cord insertion. We applied same investigational technique in our patient when we noted a low lying placenta on a second trimester scan, following which careful attention was paid to placental insertion site of umbilical cord using color doppler. This revealed velamentous insertion and a close follow up with serial scans suggested vasa previa. Cipriano et al studied the cost effectiveness of a screening ultrasound for vasa previa in all twin gestations and in-vitro fertilization pregnancies and concluded that these screening ultrasounds are cost effective[6]. Catanzarite et al followed 11 cases of vasa previa diagnosed by color doppler sonography, of which 10 were confirmed to have vasa previa upon delivery by the delivering physician, thus noting a 91% specificity of the sonographic diagnosis of vasa previa[1]. Thus, color doppler can be reliably used for umbilical cord and placental pathologies and has a very low false positive rate. Also, transvaginal approach is considered superior to the transabdominal approach, which may not be practical in obese patients, those with abdominal scars or difficult fetal presentations [3]. Rarely, transvaginal ultrasound may pose challenges in diagnosis due to motion artifacts or when a funic presentation is misinterpreted as vasa previa[3]. Second trimester is considered the best time for antenatal screening for vasa previa[7].

Several studies have compared the neonatal outcomes in vasa previa recognized prenatally with those recognized intrapartum and they described significantly better survival rates, improved APGAR scores, shorter NICU stay and lower transfusion rates in those diagnosed prenatally. Perinatal mortality up to 56% is noted if vasa previa remains undiagnosed prenatally, compared to 3% in those diagnosed prenatally. Similarly, neonatal blood transfusion rates of 58. 5 % is reported in those that remain undiagnosed prenatally versus 3.4% in those diagnosed prenatally [8-10].

Optimal management of vasa previa consists of patient education regarding signs of labor, early administration of a course of steroids, hospitalization at 31-32 weeks for fetal monitoring and cesarean delivery at 34 weeks or before, if labor ensues or if fetal wellbeing is compromised by membrane rupture or cord compression. Robinson et al reported that verification of fetal lung maturity through amniocentesis, prior to delivery of patients with vasa previa does not improve

outcomes [11]. Thus, most authors recommend a scheduled delivery at 34 or 35 weeks in the patients that do not go into labor or rupture spontaneously [11]. Chmait et al described a patient with type 2 vasa previa that they treated with fetoscopic laser ablation, who delivered at 33.3 weeks with a good perinatal outcome [12, 13].

Our patient was administered a course of steroids in anticipation of preterm delivery due to suspected vasa previa. She was also educated about this condition and about warning signs and symptoms suggestive of onset of labor. She underwent an uncomplicated cesarean section which confirmed our diagnosis of vasa previa and there were no neonatal squeal due to vasa previa or preterm delivery.

III. Conclusion

- Vasa Previa is a condition where fetal vessels travel unprotected in front of the cervical os and are at risk of rupture with the rupture of membranes or at risk of compression from the fetal head when the labor ensues.
- It is commonly associated with velamentous insertion of umbilical cord or low lying placenta and other placental abnormalities.
- A screening ultrasound in second trimester can detect these risk factors. Patients noted to have these risk factors on ultrasound should be followed with color doppler sonography to diagnose vasa previa.
- If vasa previa is suspected, patient should be educated about this condition and counseled to return to hospital in case of rupture of membranes or onset of labor.
- Patients with suspected vasa previa should be administered antepartum steroids in preparation for preterm delivery. Cesarean Section is the mode of delivery when patient presents in labor or with ruptured membranes. A scheduled delivery by cesarean should be performed at 34-35 weeks.
- Vasa previa can be a very fatal condition if not diagnosed antenatally, leading to rapid fetal exsanguination and requiring neonatal transfusion. Neonatal survival rates are significantly improved if vasa previa is diagnosed antenatally.

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To Study the Effect of Counseling on Early Initiation of Breast Feeding in the First Hour of Life

By Gami N, Mishra A, Srishti & Kocher SP

Abstract - In india there are many barriers to initiation of breast feeding within one hour of birth. This study was done with the aim of evaluating whether verbal counseling of pregnant women during the antenatal period can help improve the incidence of early initiation of breast feeding. A prospective, questionnaire based study including 100 pregnant females, was conducted a tertiary care hospital of Delhi. The patients were randomly allotted to two groups. Group A received verbal antenatal counseling regarding benefits of early intiation and group B did not. The proportion of women initiating breast feeding within one hour of birth was then assessed and both groups were compared.

Results: In group A (conselled group) 58 % women intiated breast feeding within one hour of birth while in the control group (without conselling) 32 % women did early intiation. The difference was statistically significant. (p= 0.0090)

Verbal counseling is a simple inexpensive intervention that can be easily done during antenatal visits to motivate pregnant women for early intitation of breast feeding but is sadly often overlooked. This study shows that simple measures like verbal counseling can improve the early initiation of breast feeding.

GJMR-E Classification : NLMC Code: WS 125

Strictly as per the compliance and regulations of:

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Verbal counseling is a simple inexpensive intervention that can be easily done during antenatal visits to motivate pregnant women for early intitation of breast feeding but is sadly often overlooked. This study shows that simple measures like verbal counseling can improve the early initiation of breast feeding.

I. Introduction

Early initiation of breast feeding has been recommended by the WHO since 1992. It is recommended that women who have had normal vaginal deliveries should begiven their babies to hold with skin contact, for at least 30 minutes,within a half-hour of birth and offered help by a staff member to initiate breastfeeding. At least 50% of mothers who have had caesarean deliveries should be given their babies within half-hour of being able to respond, to hold with skin contact(1).

According to WHO, an estimated 4 million newborn deaths occur every year of which almost all are due to preventable causes, attributed to infections, like, sepsis, meningitis and pneumonia. Early initiation of breastfeeding would be protective against these causes of death (2). Also the findings from aGhana study (3), clearly showed, that ensuring initiation of breastfeeding within 1 hour could cut 22% all neonatal mortality.

With all the evidence of benefits of early initiation of breast feeding present, on a practical level, only about 1 to 23% (4, 5) women are actually following it. Lack of knowledge, experience and support from hospital staff and family, religious rituals, are some of the modifiable causes. Also, effect of anesthesia post a caesarean section, emergency surgeries for the mother or the neonate, ICU/ NICU admissions of the mother or neonate, preterm babies, stillbirths, HIV positive mothers constitute some of the unmodifiable reasons for delay of breastfeeding.

This randomized study was conducted to observe if antenatal (at term) verbal counseling of the mother, regarding early initiation and exclusive breastfeeding, could significantly increase the number of early breast fed babies.

II. Review of Literature

Breastfeeding is the ideal form of infant feeding and is crucial for lifelong health and well-being. Breast fed babies gain nutritional and growth benefits (6), helps develop an enhanced immune system (7) and resistance to disease (8). The benefits are also seen in childhood. Some of these are decreased risk of childhood obesity, some cancers and diabetes (9-11).Breast feeding also has positive effect for the mother as it minimizes postpartum bleeding, by accelerating uterine involution and also facilitates in weight loss (12-13). It also protects against osteoporosis and lowers the risk of breast cancer, ovarian and endometrial cancer (14, 15, 16, 17). Successful establishment of breastfeeding also increases self-confidence and facilitates bonding with baby (18).

Early successful establishment of breastfeeding sustains breastfeeding throughout infancy. Also,it promotes warmth and protection which may reduce the risk of death from hypothermia. It has been observed that the suckling reflex of the newborn is at its height twenty to thirty minutes after birth. If the infant is not fed then the reflex diminishes rapidly only to reappear adequately forty hours later (19). Also, the antibody content of colostrum is at its maximum during the first twelve postpartum hours making it relevant.

Early breastfeeding has a physiological effect on the uterus as well, causing it to contract, thus preventing post-partum hemorrhage (20).It was found that sucking and hand touching by babies stimulates oxytocin release, which is significant for uterine contractions, milk ejection and mother infant relationship and reduction in postpartum bleeding (21).

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The percentage of women initiating breastfeeding in one hour varies all over the world. According to various public health surveys, 23.1% - 63.8% initiated breast feeding in the first hour of life.Early Initiation of Breast feeding within one hour in South Asian countries varies from 24% to 75% (22, 27).

A cross-sectional questionnaire based study was conducted in tertiary care teaching hospital, in Surat district, Gujarat. Out of all deliveries, breast milk was initiated within one hour only by 1.0 percent of mothers.

Breast feeding is not only a natural act, it is also a learned behavior. Extensive research has demonstrated that mothersrequire active support for establishing and sustaining appropriate breast feeding practices. The decision to breastfeed is influenced by many varied factors, like, demographic variables, attitude and knowledge, doctor's advice and involvement and support from family members (23). To ensure that expectant mothers adopt accurate infant feeding practices, antenatal breast feeding education; proper counseling in labor room and maternity ward should be followed.

III. Aims and Objectives

The Main Aims and Objectives of This Study Are

- To establish the proportion of postpartum women practicing early initiation of breast feeding.
- To assess if antenatal verbal maternal counseling improves the percentage of early breast fed infants.
- To educate women regarding the benefits of early and exclusive breast feeding, correct positioning of the mother and the infant to establish successful breast feeding, and regarding maternal health and hygiene with regard to breast feeding.
- To determine other barriers to the same in a tertiary health care set up.

IV. Materials and Methods

a) Methodology

This is a prospective,questionnaire based study, conducted on a population of 100 pregnant females, admitted at term in a tertiary care hospital of Delhi.

- Ethical committee clearance of the tertiary care hospital was obtained.
- The study population was selected after applying inclusion and exclusion criteria. Inclusion criteria: Pregnant females being admitted at term. Exclusion criteria includes patients with :
- Lacerations & tears requiring repair in OT.
- Extended episiotomy
- Prolonged surgery (whenever the average duration of caesarean is greater than one hour)
- Vaginal ICU admission of the mother
- NICU admission of the neonate
- Stillbirths
- HIV positive status of the mother.
- Debilitating medical conditions (such as hepatic encephalopathy)
- The pregnant women in both the groups were asked to fill up aninformed consent form (made both in English and Hindi) stating that they are aware of the survey and willing to participate in it.(Appendix B).
- Those consenting were randomly divided in the following groups:
- Group A (study population): Females admitted at term, prior induction or in first stage of labor were verbally counseled about the benefits of initiation of breast feeding in the first hour of life,correct positioning of the infant and mother to establish successful breast feeding, maternal hygiene and benefits of exclusive breast feeding (special emphasis on first hour of life was given) (Appendix A)
- Group B (reference population): No intervention done.
- After the delivery the participants were asked to fill up questionnaire consisting of 22 questions within 24 to 72 hours of delivery.(Appendix C)
- Null hypothesis for the survey: 'Antenatal maternal counseling has NO effect on initiation of breast feeding in the first hour of life.'
- The results thus obtained were compiled and analyzed statistically using chi-square test as per the SPSS statistical package.
- Confidentiality was maintained.

b) Material Used

i. Consent forms written in Hindi as well in English for the convenience of the patient.(appendix B)
ii. Performa stating the contents of verbal counseling to have a uniform dissipation of information.(appendix A)
iii. A questionnaire consisting of 22 questions.(appendix C)

V. Results

a) Observations

The study was conducted on 100 pregnant females admitted at term, or for induction in a tertiary hospital.

Group A patients (n= 50): Females admitted at term, prior induction or in first stage of labor, were counseled verbally regarding early initiation of breastfeeding. 29 patients initiated breast feeding within one hour of delivery (58%).

GROUP B patients (n=50): were met post-delivery, and were asked to fill a questionnaire (not counseled).

b) Demographic Profile of Patients

	GROUP A(n=50)	GROUP B(n=50)
AGE(years)		
<20	3	1
20-25	21	27
26-30	22	19
>30	4	3
EDUCATION		
ILLITERATE	0	1
PRIMARY(TILL 8TH)	2	1
SECONDARY(TILL 10TH)	6	0
HIGHER SECONDARY	11	7
GRADUATE	21	14
POSTGRADUATE	10	8
PARITY		
PRIMI	32	19
MULTI	18	31
1	32	19
2	16	21
3	2	7
4	0	2
5	0	1
PERIOD OF GESTATION(weeks)		
<36	0	3
36-38	6	17
38-40	34	23
>40	10	7

	GROUP A	GROUP B
MEAN AGE(years)	25.64	25.32
MEAN PARITY	1.4	1.9
MEAN POG(weeks)	39.24	38.38

c) Initiation of Breastfeeding

TABLE 1

Group A

INITIATION OF BREASTFEEDING	NUMBER(PERCENTAGE)
WITHIN 30 MINUTES:	9 (18%)
30 MINUTES TO 1 HOUR:	20 (40%)
1 HOUR TO 3 HOURS:	19 (38%)
3 TO 6 HOURS:	2 (4%)
>6 HOURS:	NONE.

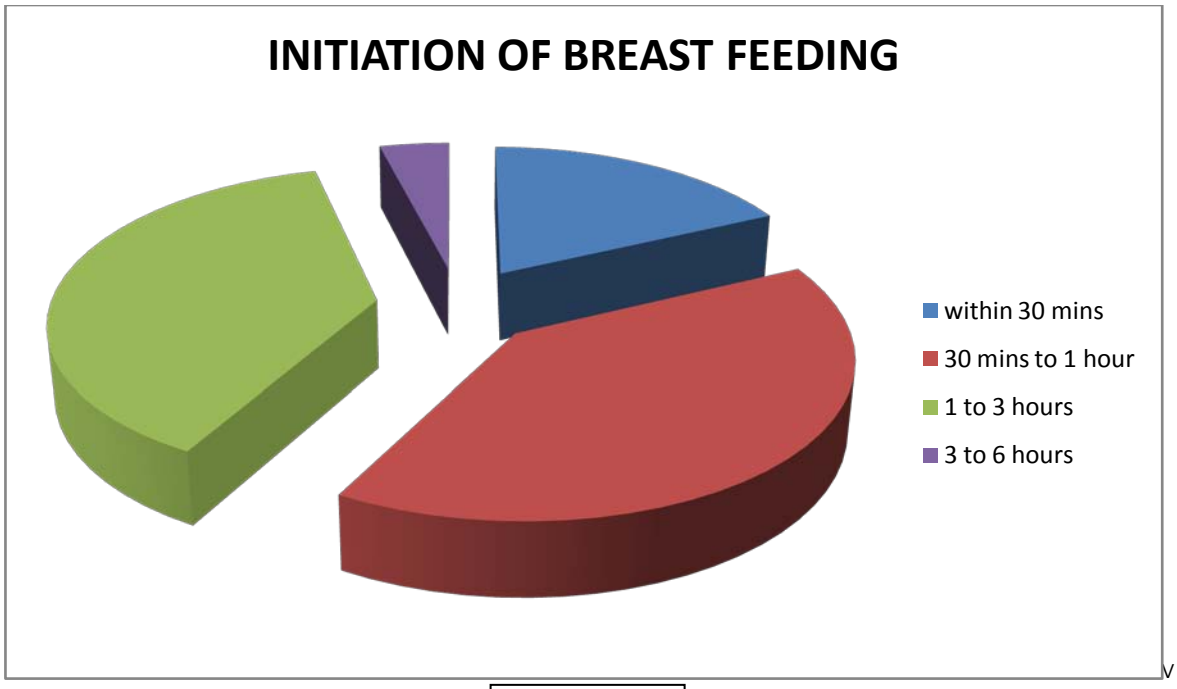

FIGURE 1

TABLE 2

Group B

INITIATION OF BREASTFEEDING	NUMBER(PERCENTAGE)
WITHIN 30 MINUTES	5(10%)
30 MINUTES TO 1 HOUR	11(22%)
1 HOUR TO 3 HOURS	31(62%)
3 TO 6 HOURS	3(6%)
>6 HOURS	None

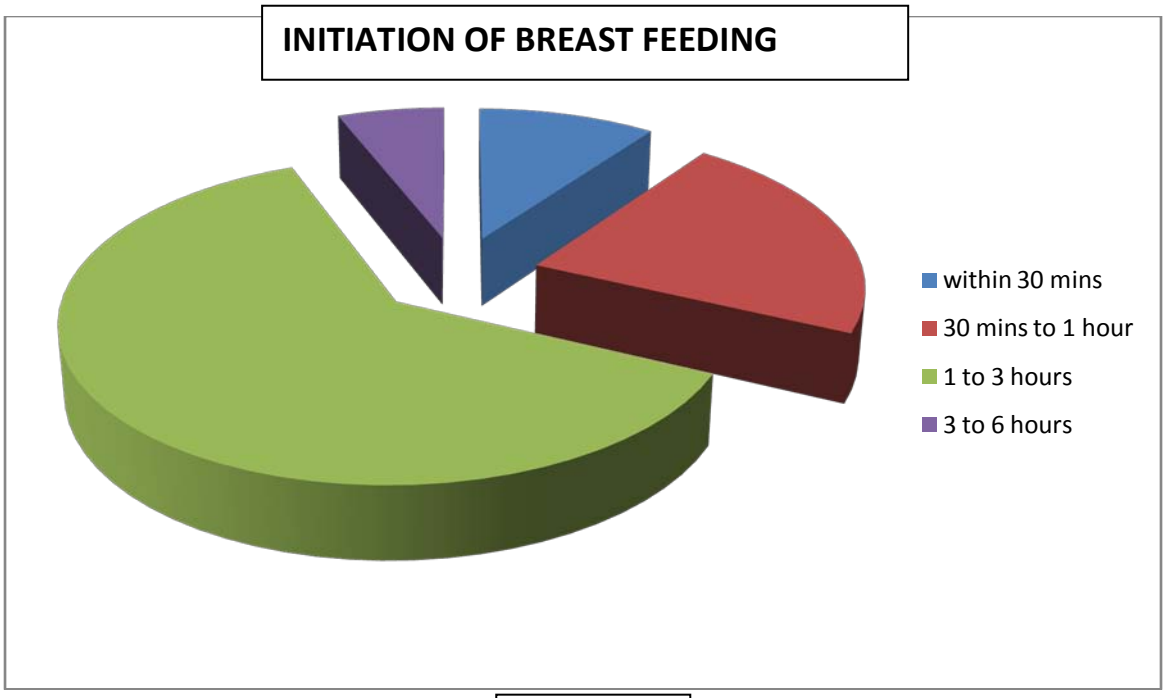

FIGURE 2

TABLE 3

REASONS FOR DELAY(GROUP A):	NUMBER(PERCENTAGE)
1. FATIGUE	6(12%)
2. BABY WAS SEPARATED	15(30%)
3. NO/POOR SECRETIONS	4(8%)
4. MOTHER UNABLE TO LATCH ON THE BABY	2(4%)
REASONS FOR DELAY(GROUP B):	NUMBER(PERCENTAGE)
1. FATIGUE	6(12%)
2. BABY WAS SEPARATED	19(38%)
3. NO/POOR SECRETIONS	2(4%)
4. LACK OF KNOWLEDGE	12(24%)
5. PAIN DUE TO EPISIOTOMY	1(2%)

To find out association between maternal counseling and early initiation, we use the CHI-SQUARE TEST At 95% confidence interval and 1 degree of freedom, the value of chi-square is 6.828, probability value = 0.0090, making the statistically significant ($p < 0.05$)

VI. Results

- In group A, with verbal antenatal counseling, 58% (29) women breastfeeding within one hour of birth (table 1).
- In group B, without counseling, 32% (16) women initiated breastfeeding within one hour of birth (table 2).
- CHI SQUARE test applied on the given data, shows significant relationship between antenatal counseling and early initiation of breastfeeding, with $p=0.0090$ (table 4).
- 90% women in group A were unaware regarding initiation of breastfeeding in the first hour.
- Separation of the baby from mother due to various reasons has been implemented as the main cause for delay in both the study groups (30% in group A and 38% in group B) (table 3).

VII. Discussion

The present study showed 58% antenataly counseled women initiated breastfeeding in the first hour of life. During the course of conducting the study, it was found that there is majorlack of knowledge among Indian females, regarding importance of early initiation as well as how to breastfeed, especially primigravidas.

Also, due to excessive workload, the tertiary hospital setting is unable to provide timely assistance to these females. Above all, in India, societal norms, values and beliefs regarding colostrum and prelacteal feeds as part of rituals, coupled with lack of family support contribute to worsening of the condition, leading to high rates of neonatal mortality.

In assessing various barriers to early initiation, separation of mother and baby, due to constitutional delay in handing over baby, birth asphyxia, maternal pyrexia, have emerged as the main cause. Maternal fatigue, inability to latch on the baby to breast and poor breast secretions are some of the other causes. In group B, lack of knowledge is also a major barrier (24%).

When early initiation of breastfeeding was assessed in the study post antenatal counseling, it was found that 58% women initiated breastfeeding. This percentage is more than the overall early initiation percentage of India, i.e., 23. 4% (NFHS 2005-6). This effect was shown to be statistically significant (p=0.0090).

Even though a positive association between antenatal counseling on the benefits of breastfeeding and increased prevalence of breastfeeding initiation within the first hour of life has been indicated, no other studies focusing specifically on the first hour of life were identified. However, differing results relating to antenatal counseling and the initiation of breastfeeding have been presented in various studies. A randomized controlled trial carried out by MacArthur et al (24), in Birmingham showed that guidance and information on the advantages of breastfeeding in antenatal follow-up clinics among a population of various ethnicities with at least three contacts duringpregnancy were ineffective for increasing the rate of breastfeeding initiation. On the other hand, Fairbank et al (25) indicated that implementation of ante and postnatal support programs, along with antenatal counseling programs among low-income women, had increased the breastfeeding initiation rate. World Health Organization and the United Nations Children's Fund have emphasized that it is important to inform pregnant women about the advantages of breastfeeding during the prenatal period, so that they can make a decision based on facts regarding how to feed their children (26)

A few of the limitations of the present study include a small sample size and restriction to a particular hospital in one region of Delhi. Despite these limitations, the study's main findings are of value; i.e. that women admitted had inadequate knowledge about breast feeding, especially timing and technique (90% females in group A), and that counseling has a significant effect on breastfeeding initiation.

VIII. Conclusion

Inadequate information being given to mothers is a major factor responsible for lowrates of exclusive breastfeeding and earlyinitiation of breast feeding. The lack of experimental research particularly in the Indianmeans that it is unclear what would be the most effective interventionto improve earlyinitiation rates. In this study, despite antenatal and labor room counselingonly about three fifths of mothers initiated breastfeeding within 1st hour of delivery. Implying, thatmeasureshave to be taken to overcome other barriers to early breastfeeding. Practical strategies like provision ofbreastfeeding counselors in the hospital setup, constantcounseling, verbal as well as practical demonstration of correct positioning and attachment to mothers (especially primigravidas) and their immediate relativeswho take care of baby and mothers; by doctors andnurses are essential for increasing early breastfeeding.All pregnant ladies, irrespective of parity, should get antenatal breast feedingcounseling.Frontline workers like nurses and dais should be trained to handover the baby immediately to mothers post-delivery (in absence of medical emergencies) as well as in counseling and supporting mothers in each and every step regarding breastfeeding.

IX. Summary

Early initiation of breastfeeding has been established as a major step for decreasing neonatal mortality and yet the percentage of women following it is very low (23.4% in India; NFHS 2005-2006).At present very little interventions are being followed in our tertiary care hospitals, to promote the same (despite the ongoing baby friendly hospital initiative since 1992). This questionnaire based prospective study was conducted on 100 pregnant females being admitted at term or for induction.50 women were counseled in the antenatal period and 50 were not. In the postnatal period, follow up for early initiation of breastfeeding and its barriers was done. Via this study, antenatal counseling has been shown to have a significant relation to early initiation as well as successful establishment of breastfeeding (58% counseled and only 32% non-counseled women initiated breastfeeding within one hour of birth; p=0.009). Therefore, it can be used as a major intervention for promotion of the same.

X. Suggestions

1. In outpatient clinics of obstetrics and gynecology, videos and charts should be played and displayed, respectively, containing information regarding early initiation, exclusive breastfeeding, how to breastfeed and complementary feeding, for mass coverage.
2. Special breastfeeding counselors should be employed in tertiary hospitals, to help women with the same.
3. Not only verbal, but also practical demonstration of attachment to breast and feeding position should be provided in counseling sessions.

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Study of Jaundice in Pregnancy

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Abstract - *Objective:* This study was aimed at determining pregnancy outcome of cases of jaundice in pregnancy over a 6 year period at tertiary care hospital.

Conclusion: The disease is associated with high incidence of preterm labour.Main causes of maternal mortality were found to be, coagulation failure, hepatic coma, renal failure, septicemia.

Methodology: All case records of patients with jaundice in pregnancy over 6 year period from the medical records office of the hospital and analysed.

Results: During the 6-year study period, there were 7180 registered deliveries in the hospital, and 30 cases of jaundice in pregnancy were seen, giving an overall incidence of 0.4% or 1 in 239 deliveries. The disease is more commonly seen in younger age group.Parity has no exact relation with the disease.The commonest chief complaints associated with the disease found in this study were nausea, vomiting, high coloured urine, malaise and pruritus. Viral hepatitis was found to the commonest cause, HEV infection being the commonest, and associated with high maternal and perinatal mortality.

GJMR-E Classification : *NLMC Code: W 791, WI 703*

STUDYOFJAUNDICEINPREGNANCY

Strictly as per the compliance and regulations of:

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Conclusion: The disease is associated with high incidence of preterm labour.Main causes of maternal mortality were found to be, coagulation failure, hepatic coma, renal failure, septicemia.

I. Introduction

a) Normal Pregnancy And Liver

Normal pregnancy by itself is a mild cholestatic condition. Though liver is not oable, palmar erythema and vascular nevi may be seen in normal pregnancy. Serum biochemical tests in the last trimester show increase in = <a ne phosphatase, cholesterol and serum bile acid. This elevation hardly e = ceeds two or four times the non gravid value and is mainly of placental origin in addition serum albumin concentration may be decreased to values '0-60% below those in the pregravid state primararily because of the Tcreased blood volume.

Altered liver function is also confirmed by reduced bromsulphthalein uptake. _ ver blood flow comprises 35% of the cardiac output in nonpregnant patient /hereas during pregnancy it is reduced to 28% as the rest of the blood is shunted through the placenta. Liver is one of the many organs affected during pregnancy due to metabolic and hormonal changes associated during pregnancy. Present available knowledge is inadequate to asses the disease, hence this study was undertaken to evaluate the status of liver disease in pregnancy in patients admitted in this institution.

b) Liver Disease in Pregnancy Jaundice in Pregnancy May Be

A) Intercurrent In Pregnancy
B) Peculiar To Pregnancy
C) Acute On Underlying Chronic Disease

A) *Intercurrent In Pregnancy*
1. Viral hepatitis
2. Drug induced
3. Gall stones

B) Peculiar To Pregnancy
1. Cholestatic jaundice
2. Acute fatty liver of pregnancy
3. Toxemia and HELLP syndrome

C) Underlying Chronic Liver Disease
1. Cirrhosis of liver
2. Chronic hepatitis

c) Intercurrent In Pregnancy

i. *Viral Hepatitis*

Viral hepatitis is the most common cause affecting the pregnant patient, prevalence being one in 700 pregnancies (ACOG -bulletin,1). Sixty types of viruses have been identified as causative agents.
The main causative agents being,
Hepatitis A virus (HAV)
Hepatitis B virus (HBV)
Hepatitis C virus (HCV)
Hepatitis E virus (HEV)

FEATURES OF THE MAIN HEPATITIS VIRUSES

	A	B	C	D	E
Virus					
Group	Enterovirus	Hepadna	Flavivirus	Incomplete virus	—
Nucleic acid	RNA	DNA	RNA	RNA	RNA
Size (diameter)	27 nm	42 nm	30-38 nm	35 nm	27 nm
Incubation (weeks)	2-4	4-20	2-26	6-9	3-8
Spread					
Faeces	Yes	No	No	No	Yes
Blood	Uncommon	Yes	Yes	Yes	No
Saliva[1]	Yes	Yes	Yes	—	?
Sexual	Uncommon	Yes	Uncommon	Yes	?
Vertical	No	Yes	Uncommon	Yes	No
Chronic infection	No	Yes (5-10%)	Yes(> 50%)	Yes	?
Prevention					
Active	Vaccine	Vaccine	No	Prevented by prevention	No
Passive	Immune šerum globulin	Hyperimmune serum globulin	No	of hepatitis B virus infection	No

[1] All body fluids are potentially infectious, though some (e.g. urine) are lowly infectious.

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ii. *Cli Nical Features Of Acute Viral Hepatitis*

Jaundice is the main symptom of acute hepatitis. It is usually preceded by orodromal symptoms by two weeks. These are the most common associated s.mptoms of acute infectious disease that include fever, chills, headache, -= aise and arthralgia. Gastrointestinal symptoms may be prominent, mainly anorexia, nausea, vomiting, diarrhoea. Upper abdominal pain which is there is rue to stretching of the peritoneum over the enlarged liver. Dark urine and a .e low discolouration of sclera herald the onset of jaundice.

Clinical signs-
There is icterus
Liver is tender though not readily palpable
Cervical lymph nodes may be enlarged

Investigations
Plasma aminotransferase (SGOT & SGPT): exceed 400IU/L (most striking -sature).

Hyperbilirunimia (reflects the severity of the jaundice),

Plasma alkaline phosphatase (reflects severity of cholestasis) Prolonged prothrombin time (indicates severe liver damage and changes - its value have prognostic value).

UrineExamination : shows presence of bile salts, bile pigments and proteins in urine.

WBC count is normal or low. High value reflects associated sepsis.

II. Materials and Methods

This study was a combined prospective and retrospective one. The study period included duration of six years It includes 30 cases admitted to this hospital as cases of jaundice in pregnancy.

All the patients admitted as diagnosed cases or diagnosed in this institution on investigations were included in this study. A systematic approach to the diagnosis depending upon the presenting symptomatology was made at the onset of the disease. All the patients were assessed thoroughly by both clinical examination and investigations in the from of CBC, LFT, KFT, COAGULATION PROFILE, USG OBSTETRICS AND USG ABDOMEN

Serological tests done for identification of type of virus (viral markers)
HAV antibody (IgM, IgG)
HBV (HBsAg, HBeAg, anti-HBe)
HCV (anti-HCV antibody)
HEV antibody (IgM. IgG).

As the causes of jaundice are varied and the diagnosis entails different modes of investigations, depending upon clinical condition suspected, the protocol was evolved to rationalize the approach.
As we all know there is no specific treatment for acute viral hepatitis.

Bed rest and diet comprised the main factors in the management of these patients.

a) Bed rest

It was continued till the signs and symptoms disappeared and liver function tests returned towards normal value.

b) Diet

A nutritious diet containing about 3000 Kcal daily was given. If not tolerated due to anorexia or nausea a light diet supplemented by fruits, fruit drinks and glucose was usually acceptable. A good protein intake was encouraged. In severe cases parenteral nutrition was given.

c) Intensive care

All the critical cases were managed in intensive care units with monitoring of

1. Haemodynamic status
2. Metabolic status
3. Coagulation profile
4. Renal and CNS function.

Broad-spectrum antibiotics, mainly third .generation cephalosporines (which were not hepatotoxic) and antimicrobials mainly metronidazole were given to prevent sepsis.

Fetal monitoring was done by biophysical methods. Delivery

It was expedited whenever indicated either vaginal or by ceaserian section as and when indicated. All the patients were given fresh frozen plasma (minimum four) In labour, to avoid excessive bleeding. Blood sugar monitoring was done frequently in labour to prevent stree induced hypoglycemia.

III. Observations and Results

The number of patients included in this study was 30. The observations are mentioned in tabular form as follows,
Total no. of deliveries=7180
Cases of jaundice=30

In this study the incidence was found to be one in 239,
Viral hepatitis - 1 in 398
Cholestatic jaundice -1 in 797
Acute fatty liver of pregnancy - 1 in 7180
Drug induced jaundice -1 in 7180
HEELP syndrome - 1 in 7180

The overall incidence of jaundice in our study was very high as compared to 1 in 700, it's mainly because this institution is a tertiary referral center.
Incidence of each causative factor is as follows

Table 1 : Distribution In Different Age Group

Age group	No. of cases	%
<25 years	17	59%
25-30 years	09	30%
> 30 years	04	10.3%

In this study the disease was found to be more common in younger age group.

In this it was found that vomiting, nausea, high coloured urine, were the most common presenting symptoms. Though pruritus was less commonly found, but if pruritus is the presenting symptom, cholestasis in pregnancy should be ruled out.

Etiological Factors And Their Incidence

Cause	No. of cases	%
Viral hepatitis	18	60
Homeostatic jaundice	09	30
Acute fatty liver	01	10
Drug induced	01	10
HELLP syndrome	01	10

As observed in other studies viral hepatitis was found to be the commonest cause of jaundice in pregnancy.

TYPE	No. of cases	%
HEV	15	83
HAV	02	11
HBV	01	05
HEV+HAV	01	05
HCV	00	00
HBeV+HEV	01	05

Hepatitis E viral infection was found to be the most common agent causing jaundice in pregnancy. Our data matches with the data published by ICMR (Pune, India 1992) the maternal mortality late found ICMR study was upto 50 % while in our study it was found to be 13 % in cases of HEV affected patients.

Table 7 : Mode Of Delivery

Out of 30 patients, 21 delivered, that is 70% patients delivered during acute stage of the disease while in rest of them pregnancy continued.

Delivered vaginally preterm	18
Ceaserian section for obstetric indications	3
Drug induced jaundice opted for (mtp)	1
Patients delivered vaginally at term.	8

Complications And Their Incidence

Complication	No. of cases	%	
Renal dysfunction		06	20
DIC		05	16
Coagulation failure (Raised PTPI)	12		
		40	
Septicemia		05	16
Hepatic coma		05	16

As expected, the incidence of coagulation failure was found to be high in this study followed by abnormal renal function, DIC, septecemia, and hepatic coma.

Out of 29 deliveries, one was twin delivery,

	No.	%
1) No. of term deliveries	15	51
2) No. of preterm deliveries	14	48
3) No. of stillbirths	5	16.6
3 were preterm, 2 were term		

In this study the incidence of preterm labour was found to be 48%. The perinatal mortality rate of this study was 16.6%.

Preterm labour was one of the main obstetric complications found in these patients.

Table 10 : Maternal Mortality Rate

	Total no. of cases	No. of deaths	%
Intercurrent in pregnancy	18	02	13
(Both cases were HEV infected)			
Peculiar to pregnanc	11	03	27

Five out of 30 cases of jaundice in pregnancy died, of acute hepatic failure. Other associated complications contributing to maternal mortality were.

1. Hepatorenal syndrome
2. DIC
3. Septicemia
4. Hepatic coma

The etiological factors associated with maternal deaths were as shown below Cause of jaundice

Out of these 3 cases one was each of homeostatic jaundice, acute fatty liver and HELLP syndrome.

IV. Discussion

As shown in table 1, 2 and 3 the incidence of jaundice was found to be one in 239 cases.As found in other studies in our study also it affected younger age group and viral hepatitis was found to be the commonest cause of jaundice in pregnancy.

As shown in table 4,5 a nd 6 the incidence of viral hepatitis was found to be one in 398 pregnancies, which is high, compared to reported incidence of 1 in 700 reported in technical bulletin of ACOG (1). The incidence in our study may be high as in India the overall incidence is high due poor sanitation and low socio economic conditions, also this is a tertiary hospital, which gets lots of referred cases from primary and secondary centers.

As reported by Schorr L B et al(2) the incidence of HAV infection is less than 1 in 1000 cases, whereas in our study it was found to 1 in 3590 pregnancies. Not a single case of vertical transmission was found, but rare cases of perinatal transmission have been reported.

AS Incidence of acute HBV infection reported by Schorr L B et al (2) is 2 in 1000 pregnancies. A shown in table 6 in our study only one patient was affected by acute HBV infection. The patient was HbeAg positive also HEV-IgM antibody positive, the baby is HbeAg positive. As reported by Simms H F and Snydmann et al (3,4) the vertical transmission rate with HbeAg+ve and HBeAb -ve is as high as 90%,whereas if patient is HbeAb+ve the vertical transmission reduces to 10%.The risk of vertical transmission to the fetus is directly proportional to HBV-DNA viral load.

Our study did not have a single case of HCV infection. Though the reported incidence being rare it is rising in developed countries like USA. Chronic HCV infection affects 1.4% of US population.

Study done by Ohto H et al (4) showed a marked variation in vertical transmission rate of HCV from 0-36 %.

HEV infection is the most prevalent and dangerous type of viral hepatitis in Asian and African continents. The incidence reported by a study done by ICMR is as high as 80-90% in cases of viral hepatitis in pregnancies. As shown in our study also it is 83%.

Reyes H and Simms H F et al (3.5) studied the course of viral hepatitis in pregnancy and concluded that its course is unaltered in pregnancy, except in cases of HEV infected cases, in which cases hepatitis has more fulminant course.

Both maternal and perinatal mortality reported by Reyes H and Simms H F et al (3, 5) js upto 20 and 50% respectively. The maternal mortality rate in cases affected by HEV was 13%.

The incidence of prematurity found in this study is 48% which matches with 20-44%, that reported by Fisk et al (6).

As shown intable 8 in our study the prenatal mortality rate is found to be 16.6%.

Intrahepatic cholestasis is found to be the second common cause of jaundice in pregnancy. Pruritus is the hallmark feature of this diseas In the study

done by Gitlin N and Reily et al (7,8), 80%of the patients presented with pruritus . In our study all the cases presented with pruritus as their chief complaint. The maternal mortality rate found in our study is 11%, which is high as compared to 2 % as found by Fisk et al (6).

As hown in tbale 9, 10, a single case of each acute fatty liver and HEELP syndrome were found in this study. Both the cases were admitted in advanced stage of the disease with established complications. Both the cases died of severe hepatic dysfunction and associated complications. The maternal mortality reported by Kaplan et al(9) in case of acute fatty liver is upto 20 %,while that mentioned for HEELP syndrome by Sibai et al(10) is 3 %.

Only one case of drug induced jaundice was found, the patient was 8 weeks pregnant. The jaundice was due high dose of rifampicin that she was taking for pulmonary tuberculosis. The patient was admitted with severe jaundice and hepatic coma. With withdrawl of the drug and intensive care management she improved completely but opted for termination of pregnancy.

Though both the cases of acute fatty liver and HELLP syndrome died, the reported incidence is not that high, for acute fatty liver, its upto 20-50 % and that for HELLP syndrome its 10-20%.

V. Summary and Conclusion

The incidence of jaundice in this study was one in 239 pregnancies.which is high as this is a tertiary center.The disease is more commonly seen in younger age group.Parity has no exact relation with the disease.The commonest chief complaints associated with the disease found in this study were nausea, vomiting, high coloured urine, malaise and pruritus.Viral hepatitis was found to the commonest cause, HEV infection being the commonest, and associated with high maternal and perinatal mortality.Second common cause was found to be cholestatic jaundice of pregnancy, followed by acute fatty liver of pregnancy and HELLP syndrome and drug induced jaundice.The disease is associated with high incidence of preterm labour.Main causes of maternal mortality were found to' be, coagulation failure, hepatic coma, renal failure, septicemia.

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The Effect of Oral Metronidazole in the Prevention of Preterm Labour among Pregnant Women With Bacterial Vaginosis

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Abstract - *Aim of the study:* To evaluatethe effectiveness of oral metronidazole in prevention of preterm labouramong pregnant women with bacterial vaginosis.

Settings and study design: An experimental (longitudinal-prospective) study done in Tikrit city between April 2011 and April 2012.

Methods: A total number of 50 pregnant women in their midtrimester were included in the study, they received oral metronidazole 200 mg orally in two divided doses for 7 days,selection criteria include pregnant women with singleton viable pregnancy in midtrimester with intact membranes. Demographic profile and prolongation of pregnancy and neonatal outcome were recorded is special forms.

Results: Oral metronidazole was not effective in prolongation of pregnancy despite its efficacy in eradicating bacterial vaginosis.

Conclusion: Our findings suggest that second trimester screening and treatment of bacterial vaginosis during pregnancy with oral metronidazole is not effective regarding prolongation of pregnancy and preventing adverse neonatal outcome.

Keywords: *metronidazole, preterm labour, bacterial vaginosis.*

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The Effect of Oral Metronidazole in the Prevention of Preterm Labour among Pregnant Women With Bacterial Vaginosis

Yossra salihkhudur [α], Huda salihkhude [σ] & Sarab salihjassim [ρ]

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I. Introduction

Preterm labour is defind as birth before 37 completed weeks of gestation (up to 36 + 6 weeks) and is one of the most significant causes of perinatal morbidity and mortality. Incidence is between (5 – 10 %) in most developed countries, preterm labour is diagnosed by regular painful uterine contractions and evidence of cervical change. It may be associated with rupture of membr- anes or positive fetal fibronectin[1] To date, no effective means of preventing spontaneous preterm delivery has been identified At least in some cases, however, microbial colonization of the fetal membranes or the amniotic fluid, or alteration in the vaginal flora such as are seen in patients with bacterial vaginosis , have been associated with spontaneous labour and preterm delivery An extensive body of evidence indicates that infection is associated with preterm delivery and with low birth weight of the infant[2] Chorioamnionitis is strongly correlated with preterm delivery, and the failure of tocolytic drug therapy Evidence of infection, manifested by the presence of organisms or inflammatory cytokines in the amniotic fluid or chorioamniotic membranes, commonly accompanies preterm labour and preterm premature rupture of membranes, particularly as the earliest gestational ages[3] Most microorganisms found in the amniotic fluid and placenta are thought to come from the vagina, especially among women with bacterial vaginosis.Bacterial vaginosis is an imbalance of vaginal flora caused by a reduction of the normal lactobacillary bacteria and a heavy overgrowth of mixed anaerobic flora including Gardenellavaginalis, Mycoplasma hominis and Mobiluncus species[4].Bacterial vaginosis is present in up to 20% of women during pregnancy. The majority of these cases will be asymptomatic, the natural history of bacterial vaginosis is such that it may rsolve without treatment although most women identified as having bacterial vaginosis in early pregnancy are likely to have persistent infection later in pregnancy[5].There is now a substantial body of evidence associating bacterial vaginosis in pregnancy with poor perinatal outcome, in particular an increased risk of preterm birth with potential neonatal sequelae due to prematurity[6] There is also evidence associating intermediate flora with adverse pregnancy outcome, whilst a number of other genital microorganisms such as Escherichia coli, Listeria monocytogenes and viridians streptococci may be involved in chorioamnionitis, carriage of these organisms during early to mid pregnancy has not associated with an increased risk of preterm labour [7]. Although maternal carriage of group B streptococcus increases the risk of neonatal sepsis due to this organism, there is conflicting evidence about whether carriage during pregnancy increases the risk of preterm birth[8].Infctions during pregnancy for which there is good evidence of an increased risk of prterm birth and preterm labourprelabour rupture of membranes, include asymptomatic bacteriuria, Neisseria gonorrhoae, Chlamydia trachomatis, Trichomonasvaginalis and bacterial vaginosis the apportunity therefore exists to reduce the preterm birth rate by treatment of these

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infections during pregnancy [9].Bacterial vaginosis is relatively common even in populations of women at low risk of adverse events and as it is amenable to treatment, identification during pregnancy and treatment may present a rare apportunity to rduce the preterm birth rate and resulting risk of of prematurity to the newborn [10]. There are several factors for the acquisition of bacterial vaginosis, it has been associated with racial origin, smoking, sexual activity, and vaginal douching Bacterial vaginosis is more common in black women, women who smoke, women who are sexually active compared with virginal women, and those who use vaginal douches. Bacterialvaginosis is a syndrome that can be diagnosed both clinically and microbiologically[11]. Diagnostic criteria are the same for pregnant and non-pregnant women. Amselet al [12]. published clinicl diagnostic criteria in 1983, and these still in use today. The clinical diagnosis of bacterial vaginosis is made if three of the four following signs are present: An adherent and homogenous vaginal discharge, vaginalpH greater than 4.5, detection of clue cells(vaginal epithelial cells with such a heavy coating of bacteria that the peripheral borders are obscured) on a saline wet mount, an amine odour after the addition of potassium hydroxide (positive whiff test).Gram stain of vaginal fluid is the most widely used and evaluated microbiological diagnostic method for bacterial vaginosis. To perform a Gram stain, vaginal discharge is collected on a glass slide, allowed to air dry, stained in the laboratory, and examined under oil immersion for the presence of bacteria. Most laboratories use an objective diagnostic scheme that quantifies the number of Lactobacillus morphotypes and pathogenic bacteria, resulting in ascore that used to determine whether the infection is present. The most commonly used system is the Nugent score (table1) [13], the criterion for bacterial vaginosis is a score of 7 or higher. A score of 4 to 6 is considered intermediate, and a sore of 0 to 3 is considered normal. Metronidazole is an antimicrobial drug with high activity against anaerobic bacteria and protozoa ,it is usually given orally and is rapidly and completely absorbed, achieving pak plasma concentration in 1 to 3 hours, with a half –life of about 7 hours. It is distributed rapidly throughout the tissues, reaching high concentration in body fluids, som is metabolized, but most is excreted in urine [14].

Table 1 : Scoring system (0-10) for gram stained vaginal smears

SCORE	LACTOBACILLUS MORPHOTYPES	GARDNELL AND BACTEROIDS SPP.MORPHOTYPES	CURVED GRAM-VARIABLE RODS
0	4+	0	0
1	3+	1+	1+ OR 2+
2	2+	2+	3+ OR 4+
3	1+	3+	
4	0	4+	

II. Subjects and Methods

This study is an experimental (longitudinal – prospective) study. It was conducted in Tikrit city between April 2011 and April 2012 where about 50 pregnant women who were at the second trimester of pregnancy were enrolled in this study after taking a verbal consent during attending a private clinic in Tikritcity. Demographic and obstetric data were recorded in a special forms for each participant. Gestational age determination was based on precisely recalled menstrual dates as they were having regular menstrual cycles, and further confirmed by their first or early second trimester ultrasound. We identified for inclusion in the study otherwise healthy women with uncomplicated singleton pregnancy between 22 and 24 weeks of gestation who had previously had a spontaneous preterm labour. Women were excluded from the study if they were having known allergies to metronidazole, an uncertain length of gestation, a multiple gestation, prior vaginal bleeding, or a medical complication of pregnancy, such as diabetes mellitus or hypertension. Only women who had not received antimicrobial therapy for at least four weeks were enrolled.

One Dacron swab, taken from the junction of the upper third and lower two thirds of the lateral vaginal wall was rolled on a glass slide and then touched to a pH stick (ColorPHast PH stick, Curtin Matheson, Grand Prairie, Tex.). The slides from women whose vaginal pH was higher than 4.4 were sent to the laboratory, were they underwent Grams staining with the results interpreted according to the criteria of Nugent et al [13]. we defined bacterial vaginosis as a Gram,s staining score of 7 or higher in conjunction with a vginalpH higher than 4.4. After these specimens were obtained, the women were received metronidazole 200 mg orally twice daily for 7 days.One follow –up visit was scheduled between 24 weeks, 0 days weeks of gestation and 27 weeks, 6 days of gestation, at least 14 days after the initial visit. All women were treated again with the same (two dose regimen) received initially, regardless of the results of the follow- up Gram, s staining. Data were analyzed using the statistical

packages for social sciences (SPSS version 11). The data were presented as numbers, percentages, frequencytables, graphs, Chi square test was used to measure statistical significance.P-value of <0.05 indicated the level of significance.

III. Results

All the 50 women were enrolled in this study.As shown in table (2), bout 5(17.2%) of primiparous women who used oral metronidazole delivered at term, whileabout 16(31.4%)had preterm delivery.Metronidzole had higher effective rates among multiparous women,12(23.5%).The study revealed that metronidazole had higher effectiveness rate ,8(25%),among women at age group (25-30) years old while showed low effectiveness rate at maternal age (30-35)years old which was 5(26.3%),table(3).Table (4) showed that about 15(13%) of pregnant women with bacterial vaginosis who used oral metroniazole were delivered before 37 weeks of gestation ,also it revealed that about 31(22%) of pregnant women with bacterial vaginosis and history of previous preterm labour who used oral metronidazole were delivered before 37 completed weeks of gestation.

Table 2 : The relation between parity and drug effect

PARITY	METRONIDAZOLE EFFECT			
	YES		NO	
	NUMBER	%	NUMBER	%
PRIMIPAROUS WOMEN	5	17.2	16	31.4
1-4	12	23.5	7	24.1
5 AND MORE	2	10	8	40

Table 3 : The relation between maternal age and drug effect

MATERNAL AGE	METRONIDAZOLE EFFECT			
	YES		NO	
	NUMBER	%	NUMBER	%
15-	2	33.3	0	0
20-	7	31.8	3	13.7
25-	8	25	4	12.5
30-	7	28.6	5	26.3
35-	2	28.5	3	42.9
40-	4	33.3	3	25
45-50	1	8.3	1	50
TOTAL	31	31	19	19

Table 4 : Rates of delivery before 37 weeks of gestation among study group.

GROUP OF WOMEN	NUMBER	%	P-VALUE
ALL STUDIED	50	100%	0.01
WITHOUT BACTERIAL VAGINOSIS	4	1	0.02
WITH BACTERIAL VGINOSIS	15	13	0.006
WITH BACTERIAL VAGINOSIS AND PREVIOUS PRETERM LABOUR	31	22	0.55

IV. Discussion

Recently, it has bcome apparent from many studies that bacterial vaginosis approximately doubles the risk of spontaneous preterm labour. There is now a substantial body of evidence that associates bacterial vaginosis in pregnancy with poor perinatal outcome, in particular an increased risk of preterm labour. This strong association between bacterial vaginosis and preterm labour has led many researchers and clinitians to believe that bacterial vaginosis may be the cause of preterm labour in these women.Regarding demographic and obstetric data in our study, metronidazole had a higher effect, 8 (25%), among pregnant women at age group (25-30) years old, while lower effect was found at maternal age (30-35) years old which was 5 (26.3%). Metronidazole was more effective among multiparous women, 12(23.5%), while it has less effect in primiparous women 16 (31.4%), table (2). In our study, we evaluate the efficacy of oral metronidazole for prevention and treatment of preterm labour in pregnant women with bacterial vaginosis. Our data indicate that

oral metronidazole is not effective in regards to the prolongation of pregnancy and pregnancy outcome, table(4). Our resultsagree with those of McDonald et al [15], who also reported no reduction in the risk of preterm delivery among pregnant women with bacterial vaginosis who were treated with metronidazole. The administration of therapy earlier or later in pregnancy might have produced different results, because the intrauterine infection associated with bacterial vaginosis may antedate the pregnancy. We chose to treat early in the second trimester to avoid fetal exposure to metronidazole in the first trimester and to repeat the regimen late in the second trimester or early in the third trimester so as to spread treatment over as wide as a period as practical. Our results show that screening pregnant women for asymptomatic bacterial vaginosis and treating the condition with a short course of orally administered metronidazole did not reduce the risk of preterm birth despite its effectiveness in eradicating bacterial vaginosis. Our results are similar to the results of a study done by Carey et al [16], in which asymptomatic women were screened at 16 – 24 weeks of gestation and treated with metronidazole. A repeat vginal smear and pH were done at 24 – 30 weeks of gestation and treatment repeated if indicated. There was no difference in low or very low birth weight babies before 32, 35, or 37 weeks. In contrast, the study of Ugwunduet al [17], demonstrated a reduction in the rate of miscarriage or spontaneous preterm delivery, (95%, CI 5.0-15.8) in asymtomatic women with bacterial vaginosis at 12-22 weeks of gestation who received metronidazole. In another study, by Lamont and colleagues [18], women with bacterial vaginosis were randomised to receive metronidazole or placebo, the placebo group had a lower gestational age at delivery and a higher rate of neonatal intensive care unit admission. These two studies in contrast to that of Carey et al, therefore, support the identification and treatment of bacterial vaginosis in pregnant women during their early pregnancy.

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Leptospirosis in Puerperium – A Case Report

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Introduction - Leptospirosis is a Zoonosis with varied clinical manifestations. It is very rare in pregnancy and Puerperium. Here we are reporting a case of Leptospirosis in Puerperium, manifested post LSCS, managed conservatively and patient recovered well.

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Dr. Sreelatha S [α], Dr. Bharathi A [σ] & Dr. Nethra H S [ρ]

I. Introduction

Leptospirosis is a Zoonosis with varied clinical manifestations. It is very rare in pregnancy and Puerperium. Here we are reporting a case of Leptospirosis in Puerperium, manifested post LSCS, managed conservatively and patient recovered well.

II. Case Report

Mrs. X aged 21 years, Tailor by occupation P1L1 with post LSCS, indication being Cephalo Pelvic Disproportion had emergency LSCS on 29-9-2013. She had atonic PPH of about 1000ml & had one unit of blood transfusion on the same day. Post-operatively she received I.V antibiotics, IV fluids. Patient developed high grade fever with chills on Post op Day 2. Routine investigations were sent. Her vitals were Pulse-120/min, BP – 110/70mg, Temp > 100°C. There was no pallor, CVS & RS was Normal. P/A-There was no guarding/tenderness, wound was clear without any discharge. Per vaginal examination showed minimal healthy lochia, without any forniceal tenderness. Laboratory investigations showed, Hb – 9.1 g/dl, Platelet count – 1.4 lakh/cu.mm, TC-11,800. Normal LFT, RFT, Na+ - 133 mEq, K+ - 3.7, Chloride-106, Widal, Peripheral smear for Malaria parasite & Dengue tests showed negative results. USG Abdomen showed post partal uterus, Solitary Gall Bladder Calculus and Hemangioma in right lobe of liver & Splenomegaly. I.V antibiotics continued, but fever persisted. On 3rd day of fever, Leptospira IgM test become positive by Microscopic Agglutination test.Then she was started with Inj Ceftriaxone + Sulbactum 1.5g 1-0-1, with Tab Doxy 100mg 1-0-1 for 7 days. Patient's general condition improved and she was afebrile after 3 days of antibiotics. Alternate sutures were removed on day 6 and complete on day8. Wound was healthy and patient was discharged on 12th post-operative day in afebrile and satisfactory state.

III. Discussion

Leptospirosis is a Zoonotic disease caused by pathogenic spirochetes of genus Leptospira. This disease is known by various names – weil's disease, Weil-Varilyev disease, Swine hard's disease, rice-field fever, Mud fever, Canicola fever, Many animals act as carriers or vectors. Human infection results from accidental contact with animals or environment contaminated with urine of rodents, cattle, swine, and dogs. Majority of infection are asymptomatic or subclinical or can result in mild flu-like illness1, 2. In few cases it is fatal and manifests as multi-organ failure, where the mortality rate ranges from 5-40%. Leptospirosis is very rare in pregnancy but acute infection can mimic HELLP syndrome or acute fatty liver of pregnancy3. It can result in intrauterine death in later months and spontaneous abortion in early months of pregnancy, congenital infection is rare and it is not an indication for termination of pregnancy4,5. The incubation period is 2 days to 3 weeks. The acute phase presents an acute febrile illness with fever, chills, myalgia, pain abdomen, diarrhoea, uveitis, conjuctival suffusion. The second immune phase is characterised by antibody production and presence of leptospires in urine. The icteric or severe form of disease is known as Weil's disease, occurs in 5-10% patients with leptospirosis with symptoms of Jaundice, renal failure, haemorrhage, cardiac arrhythmias, pneumonitis & hemodymanic collapse. Detection of leptospira is usually based on clinical recognition and serology: Anti leptospira antibodies are detected using microscopic agglutination test. A 4 fold rise in MAT-titre between acute and convalescent sera confirms the diagnosis of leptospira2. Leptospirosis is treated primarily with antimicrobial therapy. In uncomplicated infections oral doxycyline has been shown to decrease duration of fever and most symptoms. Hospitalised and complicated cases should be treated with intravenous Pencillin G which is the treatment of choice6. Recently 3rd generation Cephalospirins like cefotaxime & ceftriaxone are equally effective in treating the cases. As this is an occupational hazard it can be prevented by reducing contact with potentially affected animals & contaminated soil or water, wearing protective garments including footwear, gloves & eye protection. Chemoprophylaxis has been shown to be effective in persons with potential risk of exposure, with Doxy 250mg administered orally once in a week in highly efficacious.

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Determinants of Factors for Anaemia in Pregnancy in a Rural Medical College

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Introduction - Anaemia is defined as reduction in circulating haemoglobin mass below the critical level. The normal haemoglobin (Hb) concentration in the body is between 12-14 grams percent. WHO has accepted up to 11gm percent as the normal haemoglobin level in pregnancy. However in India and most of the other developing countries the lower limit is often accepted as 10 gms percent.Anaemia ranges from mild, moderate to severe and the WHO pegs the haemoglobin level for each of these types of anaemia in pregnancy at 10.0 – 10.9g/d1 (mild anaemia) 7 – 9.9g/dl (moderate anemia) and < 7g/dl (severe anaemia) (12).

According to WHO,in developing countries the prevalence of anemia in pregnant women averages 56%,ranging between 35-100% in different regions of the world.(1). In India anemia is the second most common cause of maternal deaths for 20% of total maternal deaths (1).

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I. Introduction

Anaemia is defined as reduction in circulating haemoglobin mass below the critical level. The normal haemoglobin (Hb) concentration in the body is between 12-14 grams percent. WHO has accepted up to 11gm percent as the normal haemoglobin level in pregnancy. However in India and most of the other developing countries the lower limit is often accepted as 10 gms percent.Anaemia ranges from mild, moderate to severe and the WHO pegs the haemoglobin level for each of these types of anaemia in pregnancy at 10.0 – 10.9g/d1 (mild anaemia) 7 – 9.9g/dl (moderate anemia) and < 7g/dl (severe anaemia) (12).

According to WHO,in developing countries the prevalence of anemia in pregnant women averages 56%,ranging between 35-100% in different regions of the world.(1). In India anemia is the second most common cause of maternal deaths for 20% of total maternal deaths (1). Association of anemia with adverse maternal outcome suchas, antepartumhaemorrhage, post partumhaemorrhage, maternal mortality and puerperal sepsis. (1) Apart from the risk to mothers it is also responsible for increased incidence of premature births, low birth weight babies and increased perinatal mortality (1) It is estimated that 20 – 50% of the world population is suffering from iron deficiency anaemia. Iron deficiency is believed to be most common cause of anaemia in pregnancy.Iron deficiency anaemia does not only affect the mother but also has impact on cognitive and psychomotor function and anaemia in infant.

Pregnant women are vulnerable to deficiencies in iron, folate, cobalamine and vitamin A. In addition, chronic infections may inhibit cell proliferation and erythropoiesis in the bone marrow which can cause anaemia.(5) The changes in the immune system associated with pregnancy have been suggested as the reason for hookworm and malarial parasite infestation on the other hand, impaired micronutrient absorption thus increasing the susceptibility of pregnant women to anaemia. Recently, infection with HIV has emerged as an additional important risk factor for anaemia in pregnancy (6).

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Nearly half the pregnant women in the world are considered to be anemic that is 52% as compared to 23 % in industrialized countries. Recent World Health Organization (WHO) data shows that approximately 10.8 million in African countries, 9.7 million in western Pacific and 24.8 million pregnant women in South East asia are anemic, the highest number being in South east Asia. (3)

II. Aim

- To assess prevalence and identify predisposing factors for anaemia in pregnant women to highlight the importance of antenatal care regarding maternal health.
- To formulate the recommendations for correction of predisposing factors for furtherreduction of incidence of anaemia.

III. Objectives

- To investigate the importance of nutritional deficiencies and infections in the development of anaemia in pregnant women.
- To establish if 'at risk' group can be identified for targetted intervention.

IV. Methods and Methodology

A retrospective study was donefrom January 2007 to January 2010 on 1000 antenatal patients attending to the O.P.D. of our hospital with haemoglobin less than 10 gm% with gestational age between 8 weeks till delivery and singleton pregnancy were included in the study.

We assessed prevalence of iron deficiency anaemia and associated risk factors in women. Women before 8weeks, multiple pregnancies, Hb% 10 or more were excluded from the study.

Complete blood count was performed to assess the severity and type of anaemia (along with blood indices and peripheral smear) and was repeated after treatment to see the response to treatment.

Hb% levels were measured at first visit. Other investigations to rule out any chronic infection apart from routine urine and stool examinations were done.

Test for sickling with Hb-electrophoresis were done in all patients as this area is endemic for sickling. Serum iron and serum ferritin levels were not done as most of the patients were not affording.

The information was recordedby taking detailed history to assessrisk factors leading to anaemia such as nutritional status parity, birth spacing, family planning methods,infection, bleeding from any site, use of recreational drugs such as Pan, tobacco, habit of Pica).

For this study, anemia was defined as Hb below 10g/dl. Anemia was further categorized into 3 levels mild (9-10 gm %) moderate (7- 8.9 gm %)) and severe (<7 gm %).

Table 1 A : Showing Thedemographic Profile of the Patients(N = 1000)

Parameters	No. of patients	frequency
Age (in years)		
18-25	330	33%
26-35	540	54%
>35	130	13%
Gestational age (in weeks)		
10-28 weeks	150	15%
29-34 weeks	600	60%
>34 weeks	250	25%
Parity:		
a.Primigravida	340	34%
b.Multipara	540	54%
c.Grand Multipara	120	12%
Birth spacing		
a.< 1 year	250	25%
b.1 – 3 years	650	65%
c.> 3 years	150	15%
Family planning method:		
a.Users	340	34%
b.Non-users	660	66%
Types of admission:		
Booked	280	28%
Un-booked	720	72%
Accordance to referrel		
a. Referred	680	68%
b. Non-referred	320	32%

Table1 B : Showing the Socio-Economic Standard of the Patients According to Income and Education

Parameters	No. of patients	frequency
Literacy frequency		
I. Illiterate	240	24%
II. Primary	320	32%
III. Secondary	280	28%
IV. Higher secondary	160	16%
Socio-economic condition		
a. upper middle	100	100
b. middle	440	440
c. lower	460	460

Table 1 C : Showing t he Dietery Habits Features No. of Patients Frequency Dietary Habits

Features	No. Of Patients	Frequency
DIETARY HABITS		
a. Vegeterian	640	64%
b. Non-vegeterian	360	36%
Usage of regular supplements		
a. Iron supplements only	430	43
b. Both iron and folic acid	110	11
c. No suppliments	460	46

Blood picture	No. of patients	Percentages
Normocytic	440	44
Microcytic hypochromic	480	48
Macrocytic	120	12

Table 2 : Distribution of patients according to severity of anaemia

Parameters	No. of patients	Frequency
Haemoglobin		
Mild (9-10 gm%)	180	18
Moderate (7- 8.9 gm%)	440	44
Severe (<7.0gm %)	380	38
MCV (83 – 97 fl):		
Low (< 83fl))	630	63%
Very low (< 60 fl)	340	34%
High (> 100 fl)	300	3%
MCHC (32 – 36 gm%):		
Low (<32gm%)	920	92
Normal (32 – 36gm%)	80	8

Table 3 : Percentage of participants with positive Risk Factors (n=1000)

Risk factors:	Percentage
Nutritional deficiency:	
Iron	22%
Iron and folic acid	7%
Protein	8%
Combined	63%
Worm infestation	13%
Chronic medical illness:	
Malaria parasite	9%
UTI	37%
TB	3%
Other infections -eg-uri/lri/csom/skin/hiv	21%
	0.5%
Chronic blood loss:	
Menorrhagia	21%
Bleeding piles	12%
Pan, tobacco chewing	33%
Sickle cell trait	7%

(So me participants had multiple positive etiological factors leading to anemia)

Table 4 : Birth weight of child and mother's haemoglobin level at last antenatal visit

Birth weight	Hb< 7	Hb 7-8.9	Hb 9-10
<2 kg	140	100	20
2-3 kg	240	180	80
> 3kg	0	160	80
Total	380	440	180

V. Discussion

Anaemia in pregnancy particularly severe anemia is associated with an increased risk of maternal mortality, which, in most developing countries, continues to be unacceptably high. In 1993, the World Bank rankedanaemia as the eighth leading cause of disease in girls and women in developing countries (1).

Anaemia is more common in women especially if they are young, poor, pregnant or members of an ethnic minority.It is most common medical disorder in pregnancy related to increase maternal and perinatal morbidity, therefore antenatal care should be done for early detection and management.The prevalence, etiology and degree of severity vary in different populations, it is 35% for non pregnant women and 51% for pregnant women globally, and 3 – 4 times higher in developing countries. In south Asia prevalence of anaemia among pregnant women is as high as 65%.

In developing world, current strategies to prevent and correct anaemia and iron deficiency in pregnant women have met little success.Our study revealed iron deficiency anaemia the most common type of anaemia in pregnant women.Two large studies with industrial world, involving over one million pregnancies clearly indicated that favourable pregnancy outcomes are less frequent among anaemic mothers. Our data showed association of maternal anaemia in pregnancy with nutritional deficiency habit of pan, tobacco, acute and chronic blood loss and chronic medical disorders.

The present study showed that anaemia was common during 29-34 weeks of gestation. Adequate birth spacing were lacking in our study group, 65 % had a spacing of 1-3 years only, and 25% having spacing even less than 1 year.

66% of these rural women had no history of usage of any family planning methods. Lack of ante-natal check up was prevelent among these anaemic patients, as 72% of these patients were unbooked.

Contraception use is unpopular among rural mothers.However, with more of the rural women being educated and being employed, and with theimproved accessibility to health care, contraception use will improve in the future. This process can be accelerated by combining accessibility with effective health education to the rural mothers. However, mothers at high risk should be strongly advised to practice contraception. (3) This advice can be reinforced during both the antenatal and postnatal periods.

The common cause noted in our study was nutritional deficiency, (46% of these patients did not receive any nutritional supplements) as evidenced by the prevalence of mainly normocytic, normochromic or microcytic, hypochromic blood picture, followed by hook worm infestations and sickle cell trait was seen in a number of patients. Iron deficiencies may develop during pregnancy because of the increased iron requirements on the mother's body to supply the expanding blood volume and the rapidly growing fetus and placenta. Literatures suggest that iron deficiency is responsible for about 50% of the cases of anaemia in pregnant women in developing countries (4).

It has been suggested that the prevalence of anaemia may depend on the season, increasing in relation to malaria in the wet season, or in relation to food shortage at the end of the dry season (1), though we could not get much correletion between seasonal change and anaemia. Malaria was seen in 9 % of these anaemic patients.

The majority of these mothers were multiparous and would have been prescribed haematinics during previous pregnancies. Yet, many of them (15%) were already anaemic (Hb<10.0 g/dl) at the first antenatal visit. Past iron supplementation may not have prevented anaemia in the current pregnancy. Iron supplementation should be continued even after pregnancy, as there is usually inadequate iron absorption from diet to meet demands of pregnancy without supplementation in this rural population. The net additional iron requirements during pregnancy are estimated to be 1 000 mg per day. (4)

In our institute, iron and folic acid supplementation is routinely prescribed in pregnancy. It is anticipated that good compliance to the prescribed iron supplements prevent anaemia during pregnancy. However, the compliance rate among rural mothers in our region is low.The diet is traditionally vegetarian, and is likely to have a poor bioavailability of iron.

Since cobalamine is exclusively found in animal products, the traditional diet might cause nutritional cobalamin deficiency, as observed in other communities with a predominantly vegetarian lifestyle Cobal-aminemalabsorption may be another explanation for the apparently high prevalence of deficiency in our study.

Assessment of folate status is difficult, especially during pregnancy. Based on the results of the present study, it is uncertain whether the prevalence of folate deficiency really is low. The current practice of routine folate supplementation should therefore con-tinue, especially as the importance of a sufficient folate supply for normal pregnancy outcome has been recognized during recent years.

Intestinal helminthiasis is strongly associated with overall anaemia and severe anaemia in pregnant women in this population. Investigations carried out in villages near Hyderabad indicated that the prevalence of morbidity due to infections was doubled in women with haemoglobin levels below 8.0 g/dl (8).

The drugs used for treating schistosomiasis are not considered totally safe to use in pregnancy. The use of Praziquantel (PZQ) is found to be the safest of all. A review of the current known toxicology of PZQ over two decades of clinical experience suggests a very low potential for adverse effects on either the mother or her unborn child. The review concluded that pregnant women should be treated with PZQ that women of childbearing age should be included in all mass treatment programmes and that lactating women should not be systematically excluded from treatment.

The HIV infection rate among pregnant women is 0.5% other studies have also found that HIV infection is a risk factor for anaemia in pregnancy. This could be due to the enhancement of nutritional deficiencies, opportunistic infections and the use of antiretroviral drugs in patients with AIDS.

It should also be noted that there were no antiretroviral treatment facilities for HIV-positive patients at the time of the study. A single dose of nevirapine was used only at the occurrence of labour pain, and therefore had no impact on anaemia in our study subjects.

VI. Conclusion

In developing world, current strategies to prevent and correct anaemia and irondeficiency in pregnant women have met littlesuccess. (2) Anaemia still constitutes a public health problem in the world, especially in the developing countries. Nutritional anaemia is found more among rural mothers, where poor dietary intake and parasitic infections are more common. Many women start their lives with insufficient iron stores, but also, because of inadequate child spacing, they have little time to build up their iron levels between pregnancies (3).

However, risk factors such as anaemia in pregnancy can be controlled and monitored by good antenatal care and appropriate action, including referral, in accordance to the level of severity of the anaemia. (3) The problem of anaemia in pregnancy can also be prevented by increasing spacing between births through the promotion of contraception. This will help build up any depletion in iron stores.

A key component of safe motherhood is the eradication of anaemia during pregnancy. The most effective interventions against these infections are preventive and promotive in nature. The prevention should include provision of safe drinking water, clean food, Control of flies, safe sex and ensuring universal precautions in human contact.

This study has noted the high prevalence of anaemia in pregnancy among rural mothers. Although haematinics were routinely given, it has not improved the status of anaemia in mothers, probably because of poor compliance. Compliance should be improved by health education, especially in high risk mothers.Previous global estimates made by DeMaeyer in 1985 indicated that approximately 30% of the world's populationwas anaemic (13).These estimates seem to be based on an

extrapolation of the prevalence in preschool-age children, school-age children, women, and men.Global population resides, indicated that 43% of preschool-age children, 35% of all women, and 51% of pregnant women were anaemic . In 1992, WHO estimates for the year 1988 indicated that 37%, 51%, and 35% of all women and pregnant and non-pregnant women were anaemic (14).GOVERNMENT OF INDIA INITIATIVE AIMING to have hb of 12g/dl by 12 years of age using prophylactic iron therapy&iron rich food. WHO recommendation is 60 mg elemental iron &250ug of folic acid once daily for 6 months. Ministry of india, government of india recommends 100mg of elemental iron &0.5mg folic acid in second half of pregnancy for 100 days.

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Chronic Non - Peurperal Uterine Inversion:Recommendations for Diagnosis and Management

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Abstract - Inversion of the uterus is a rare clinical condition. Further, chronic non-puerperal uterine inversion is a still rare clinical entity with very few clinicians encountering it.

Intra-uterine tumours; especially large fundal submucosal leiomyomas are the usual precipitating factors. Due to its extremely rare occurrence it may pose a diagnostic as well as surgical challenge for the gynaecologist. Correct diagnosis based on clinical findings & diagnostic modalities like Ultrasonography (USG) and Magnetic Resonance Imaging (MRI) careful preoperative planning & appropriate surgical procedure are imperative for a successful outcome.

We propose certain recommendations for diagnosis and management of chronic non puerperal uterine inversion associated with a large prolapsed fundal submucosal fibroid accurate diagnosis commencing with strong clinical suspicion & confirmation with advanced diagnostic modalities is the cornerstone of management. HYSTERECTOMY is difficult with the grossly distorted anatomy.

Keywords: chronic non-puerperal uterine inversion, ultrasonography, magnetic resonance imaging, hysterectomy.

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Intra-uterine tumours; especially large fundal submucosal leiomyomas are the usual precipitating factors. Due to its extremely rare occurrence it may pose a diagnostic as well as surgical challenge for the gynaecologist. Correct diagnosis based on clinical findings & diagnostic modalities like Ultrasonography (USG) and Magnetic Resonance Imaging (MRI) careful preoperative planning & appropriate surgical procedure are imperative for a successful outcome.

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Keywords: chronic non-puerperal uterine inversion, ultrasonography, magnetic resonance imaging, hysterectomy.

I. Introduction

Uterine inversion refers to descent of the uterine fundus to or through the cervix, so that the uterus is literally turned inside out.

Uterine inversion is a rare condition that occurs typically as a complication of parturition and is usually associated with poor obstetric practises [1].

Most uterine inversions are acute and puerperal (85.8%). Non-puerperal (chronic or gynaecological) inversions are described in very few patients. They represent about one sixth of all inversion cases (16.35 %) [2].In fact, it is so rare that most gynaecologists wont see one in their life time.

Chronic non-puerperal uterine inversion is often associated with uterine pathology Uterine leiomyomas tend to be the most common inciting factor with leiomyosarcoma, rhabdomyosarcoma, endometrial polyps, endometrial carcinoma and uterovaginal prola- pse being the other possible preceeding factors[3].

Uterine leiomyomas were found to cause inversion in 78.8% to 85% of the cases [4].

We were fortunate to diagnose clinically and manage a woman presenting with gynaecological uterine inversion. Laparotomy presented unique surgical challenges and required some detailed pre-operative planning and advanced intraoperative surgical skills.

II. Case Report

Mrs XYZ, 45, P6L6 presented with crampy lower abdomen pain, feeling of lump in lower abdomen, foul smelling vaginal discharge and severe menorrhagia since one month. She had six term deliveries. She had no bowel or bladder complaints or anorexia.

Patient was tachycardic and severely pale. A 12 weeks size bulge was felt in the suprapubic region. Notably uterine fundus could not be well defined. Per-speculum, a large foul smelling, fleshy ulcerated mass protruding in the vagina and completely filling it was seen. She was actively bleeding.

On bimanual examination large firm fleshy mass about 8cm x 10cm of uterine origin was felt. Remarkably no cervical rim was felt around the mass.

Based on these two features, we strongly suspected a long-standing uterine inversion.

USG showed multiple uterine fibroids and little else.

MRI was then performed. It revealed a large submucous fundal uterine fibroid with clear cut inversion of uterus. (Figure 1)

Pre-operative blood transfusions restored her haemoglobin level. At laparotomy, uterus was completely inverted with both adnexal structures disappearing and incarcerated within the inverted fundal cup (Figure 2). Pelvic anatomy was distorted beyond

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recognition. Obviously a simple abdominal hysterectomy was out of the question. Attempt was made to reposit the uterus abdominally by grasping both round ligaments using Haultain's method. Due to tight cervicovaginal ring around inverted fundus, uterus did not budge. Since the cervical ring through which the fibroid had dragged the fundus down was tight and deeply embedded in the pelvis any attempts to reach and cut it were unsuccessful.

We were now staring at a herculean task of identifying, mobilising, freeing and extricating the uterus without causing damage to ureters which were obviously grossly enlarged and distorted. We decided to proceed in a systematic manner.

Bilateral round ligaments were clamped cut and ligated close to the pelvic wall. After visualising and palpating the enlarged ureters in lower fold of infundibulopelvic ligaments, the ligaments were clamped, cut and ligated. Uterovesical fold of peritoneum was opened and bladder and ureters were pushed away.

The defining step of surgery was doing bilateral internal iliac artery ligation at this juncture, well before proceding any further.

Accessible portions of broad ligament with uterine vessels were clamped, cut and ligated. Anterior vaginal wall, stretched over inverted fundus and fibroid was cut. Fibroid and fundus exteriorised through this incision. Posterior vagina with uterosacrals clamped cut and ligated and the uterus with fibroid and incarcerated adnexa were removed and vaginal vault was closed (Figure 3).

Essentially the hysterectomy was performed upside down.At all times the ureters were followed closely as they are in danger of being damaged all throughout the procedure.When the fundus inverts it drags the infundibulopelvic and retroperitoneum along with it dragging and entrapping the ureters within. Early ligation of internal iliacs ensures a bloodless field through the rest of the surgery. Though the surgery was time consuming patient recovered uneventfully.

III. Discussion

Inversion of the uterus is an unusual entity with not many cases having been reported. It may be classified as puerperal or obstetric and non-puerperal or gynaecologic inversion [5].

Non-puerperal inversions are usually caused by intrauterine tumours like leiomyomas.

Mwinyoglee et al. reported that 97.4 % of uterine inversions are associated with tumours, out of which 20% were malignant [6]. Hence histopathology of the tumor is imperative.

Uterine inversion can be classified into four stages as

Stage1: the inverted uterus remains in the uterine cavity,

Stage2: complete inversion of the fundus through the cervix,

Stage 3: the inverted fundus protrudes through vulva and

Stage4: inversion of the uterus and vaginal wall through the vulva [7] .

Inversion can also be classified as acute and chronic. Acute uterine inversion causes severe pain and haemorrhage where as chronic inversion is insidious and characterized by pelvic discomfort, vaginal discharge, irregular vaginal bleeding and anemia.

The diagnosis is easier with stage 3 and 4 disease where a protruding mass is seen on per speculum examination without definite margins of the cervix and absence of uterine body on bimanual or rectal examination.

In other cases, the diagnosis can be difficult and the use of ultrasound or computed tomography is necessary. MRI and CT scan have been shown to be useful diagnostic tools [7].

Lewin et al reported that in T2-weighted MRI scans, a Ushaped uterine cavity and a thickened and inverted uterine fundus on a sagittal image and a "bulls-eye" configuration on an axial image are signs indicative of uterine inversion [8].

In acute inversion the uterus can generally be reposited back by vaginal manipulation like Johnson's procedure or O'Sullivan Saline hydrostatic pressure method [9]. If these attempts fail then laparotomy is imperative.

In chronic inversion surgical management is mandatory. Depending on the reproductive desire and associated conditions, surgical reposition or hysterectomy could be considered.

The operative procedures for the treatment of chronic inversion are Huntington's [10] and Haultain's [11] abdominal operation and the two vaginal surgeries: Spinelli's and Kustner's techniques [12].

Repositioning of the uterus may not be possible in all cases and hysterectomy may be the only option. Hysterectomy can be performed abdominally or vaginally. In case of large leiomyomas performing myomectomy prior to hysterectomy may be helpful.

IV. Conclusions

Chronic uterine inversion is an extremely rare condition that is difficult to manage even for the experienced gynaecologists. Most of the gynaecologists wont see such a case in their lifetime. Uterine inversion has a good prognosis when managed in a timely and correct manner.

Clinical findings should never be disregarded. Ultrasonography may satisfy our diagnostic needs. If not then advanced imaging techniques like MRI are recommended to seal the pre operative diagnosis.

The treatment for chronic uterine inversion is always surgical and that includes both abdominal and vaginal approaches. However conservative surgery may not be feasible in all cases and hysterectomy remains the only option. Adequate blood must always be kept at hand. Surgery for this procedure is never easy and should be performed by a well trained senior surgeon after careful preoperative planning and review of literature, often with urologist on standby.

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Legends to Figures

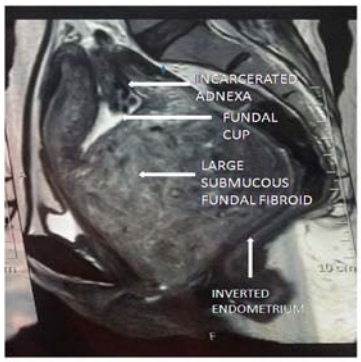

Figure 1 : MRI showing large submucous fundal fibroid causing inversion of the uterus

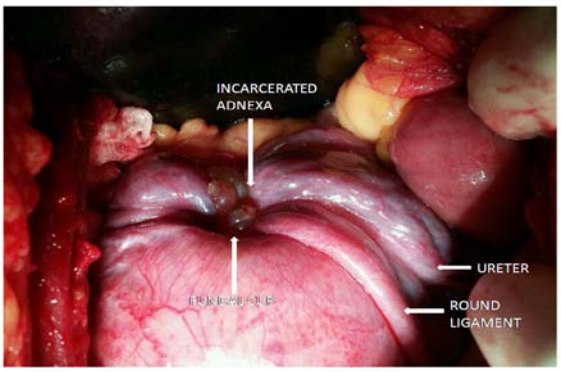

Figure 2 : In-situ findings during laparotomy showing inverted fundal cup caused by the prolapsed submucosal fundal fibroid with consequent incarceration of the adnexal structures within it. Also the anatomy is grossly distorted.

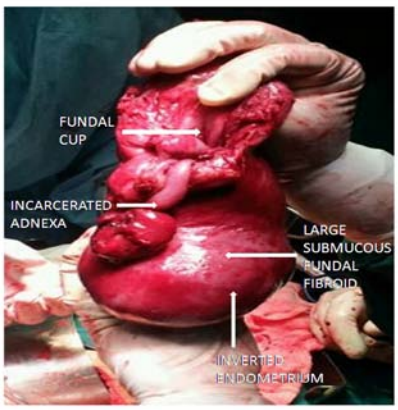

Figure 3 : Hysterectomy specimen showing a large prolapsed submucous fundal fibroid with inverted fundal cup and adnexal structures incarcerated within it.The endometrial lining is turned inside out due to the inversion.

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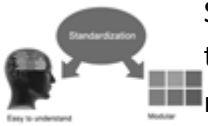

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Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

5. Ask your Guides: If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

8. Use the Internet for help: An excellent start for your paper can be by using the Google. It is an excellent search engine, where you can have your doubts resolved. You may also read some answers for the frequent question how to write my research paper or find model research paper. From the internet library you can download books. If you have all required books make important reading selecting and analyzing the specified information. Then put together research paper sketch out.

9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

11. Revise what you wrote: When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

14. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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