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Prevalence rate of signs and symptoms in pregnancy

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ABSTRACT

"Every pregnancy faces risks" with occurrence of various signs and symptoms including danger signs during antepartum, intrapartum and postpartum phases which require regular antenatal services. The current retrospective study was aimed to assess the prevalence of signs/symptoms of pregnancy. It was being conducted in Obstetrics Department, Punjab Institute of Medical Sciences, Jalandhar (India) during April to June, 2012. Socioeconomic variables, parity, antenatal care and event outcomes were explored. Majority of mothers belonged to 21-30 years age group (75.00%) and middle socioeconomic status (67.00%). 42% mothers conceived within year of marriage and were referred from periphery (57.00%). 44% suffered from Nausea and Vomiting of Pregnancy whereas, anorexia reported among 12% women. 76% mothers took regular iron and calcium while 5% reported intolerance to iron tablets. 61% and 22% mothers experienced ankle edema in second and third trimester, respectively. Backache, leg cramps, abdominal pain and increased urinary frequency was complained in 47%, 14%, 33% and 50% mothers, respectively. Similarly, 32% experienced constipation and discharge per vaginum was seen among 12% mothers. While, 03%, 05%, 13% and 16% of mothers had leakage per vaginum, bleeding per vaginum, urinary tract infection and headaches, respectively. Various unusual signs/symptoms appear during pregnancy due to physiological hormonal changes. If ignored, they may lead to complications which may prove dangerous for mother and baby. Pregnant women should be able to recognize these symptoms and approach for emergency care for the same. Education programs should be promoted to enhance knowledge of danger signs among pregnant females including family members.

Key words*: Antenatal Care, Danger signs, Education programs, Emergency Care, Referred.*

INTRODUCTION

Each year an estimated 123 million women become pregnant successfully, excluding a substantial additional number of women, around 87 million who become pregnant unintentionally (Adetunji, 1998). Alan Guttmacher Institute (1999) has proposed that out of the estimated 211 million pregnancies that occur each year, about 46 million ends in induced abortion. This explains that demand is high for antenatal health care to provide reassurance, solve problems that may arise from pregnancy and confirm the status conferred by pregnancy (WHO, 2005).

A substantial proportion of maternal deaths, perhaps as many as one in four, occur during pregnancy. Egypt National Maternal Mortality Study (2000) has found that 9% of all maternal deaths occur during the first six months of pregnancy and a further 16% during the last three months in Egypt. Apart from the complications of Unsafe Abortion, which can be prevented or dealt with by good post-abortion care, three types of health problems exist in pregnancy. First, the complications of pregnancy itself (Threatened Abortion, Hyperemesis Gravidarum); second, diseases that happen to affect a pregnant woman and which may or may not be aggravated by pregnancy (Hypertension, Anemia), and third, the negative effects of unhealthy lifestyles (smoking, alcohol) on the outcome of pregnancy. Pregnancy has many complications that require the support of health care services (Franks et al., 1992). All need to be tackled by a regular antenatal care services. In Lusaka, Zambia, nearly 40% of pregnancy-related referrals to the university teaching hospital were related to complications of the pregnancy itself, rather than to childbirth: 27% for Threatened Abortion or Abortion complications, 13% for illnesses not specific to pregnancy such as malaria and infections, and 9% for Hypertensive disorders of pregnancy (Murray et al., 2001). In a prospective MOMA survey of six West African countries, one third of all pregnant women were shown to experience some illness during pregnancy, out of which 2.6% needed to be hospitalized (de Bernis et al., 2000).

Various signs and symptoms in pregnancy have their own general prevalence rates. Nausea and Vomiting of Pregnancy (NVP) complicates about 50-90% of pregnant women with 0.5-3% women experience a severe form of NVP, known as Hyperemesis Gravidarum (Lacasse et al., 2009). Pallor as a sign of Anemia is seen among 41.8% of pregnant women, with the highest prevalence rate (61.3%) found among pregnant women in Africa and 52.5% among women

belonging to South East Asia (Benoist et al., 2008). *Bleeding per vaginum* complicates pregnancy of about 20% women (Khanam et al., 2005). The general prevalence of *Discharge per vaginum* is 6-32% among pregnant women (Shetty and Davis, 2012) while 20% of pregnant women experiences sign and symptoms of Urinary Tract Infection (Parveen et al., 2011). 3% has *Leakage per vaginum* during their pregnancy (Noor et al., 2007). Abdominal pain/discomfort is reported among 5-10% of pregnant women (Chandraharan and Arulkumaran, 2005). Ankle edema is observed among 80% of pregnancies. 50% of pregnant women complain about backache (Katonis et al., 2011) while 11-38% of pregnancies experiences constipation (Jewell and Young, 2012).

With the assumption that "every pregnancy faces risks" (Graham, 1998; Stevens, 2000), women should be made aware of danger signs of obstetric complications during pregnancy, delivery and postpartum period (WHO, 1994). The knowledge will ultimately empower them and their families to make prompt decisions to seek care from skilled birth attendants (Pembe et al., 2009). Various authors indicated about the low levels of awareness of obstetric danger signs during pregnancy, delivery and postpartum among women (Moran et al., 2006; Hiluf and Fantahun, 2007; Pembe et al., 2009). Key danger signs are those that are common, can readily be recognized and related to serious complications. They are grouped under three phases of pregnancy: antenatal, natal/childbirth and postnatal/postpartum. The key danger signs during antenatal period include; severe vaginal bleeding, swollen hands/face and blurred vision, while, key danger signs during childbirths are; severe vaginal bleeding, prolonged labour (labour lasting more than 12 hours), convulsions and retained placenta. Severe vaginal bleeding, foul-smelling vaginal discharge and high fever are regarded as key danger signs of postpartum phase (Kabakyenga et al., 2011).

Pregnancy is not just a matter of waiting to give birth. It can also be one of misery and suffering, when the pregnancy is unwanted or mistimed, or when complications or adverse circumstances compromise the pregnancy, causes ill-health or even death. Pregnancy may be natural, but that does not mean it is problem-free. Women around the world face many inequities during pregnancy. During this crucial time, women rely on care and help from health services, as well as on support systems in the home and community. This study was organized to determine the prevalence of various signs and symptoms including danger signs of pregnancy along with the

study of socio-demographic variables, maternal and neonatal outcomes of all the pregnant study subjects.

MATERIALS AND METHODS

A cross sectional retrospective study was conducted in the Department of Obstetrics and Gynaecology of Punjab Institute of Medical Sciences (PIMS), Jalandhar (Punjab, India) which is a tertiary care centre where emergency obstetric care services are provided to women referred from other centers in addition to antenatal care and delivery services for low and high risk booked pregnant women. All the patients (N= 100) admitted through Emergency Room or Outpatient Department during April, 2012 to June, 2012 were recruited in the study after taking their verbal consent. The pregnant women were also reassured about confidentiality of information and no women refused to participate in the study. Structured questionnaire was developed and administered to the study subjects. The study protocol was approved by Ethical Committee of Institute.

Each woman was personally interviewed on either the day of or day after delivery regarding the details of demographic variables, obstetric history, maternal outcome and neonatal outcome. Demographic variables included age, socioeconomic status and booking status. Booking status was mentioned as patients who had three antenatal visits as a booked patients and patients with less than three antenatal visits as an unbooked patient. Obstetric history included parity status, maternal health before and during pregnancy and detailed information of various signs and symptoms occurring antepartum, intrapartum or postpartum. Parity grouped as Primiparity and Multiparity. Maternal outcome was recorded which included mode of delivery, occurrence of anemia, postpartum hemorrhage and maternal death. Neonatal outcome such as gestational age, birth weight, perinatal mortality etc. was also documented.

The current study was designed to determine the prevalence of various signs and symptoms among all the patients who were delivered at PIMS along with the demographic variables, obstetrics history and event outcomes.

RESULTS

Table 1 describes the demographic variables of all the pregnant women (N= 100) who were delivered at our institution. 75% of the women belonged to younger age, out of which 43% were

of 21-25 years whereas, 32% were from 25-30 years age group. Most of the women who approached for antenatal care were from middle socioeconomic status (67%) while the number of women was approximately the same in both low (16%) and high (17%) socioeconomic status.

Table 1: Demographic variables of all the pregnant women (N= 100)

Category	Percentage (%)	Number of subjects
AGE (yrs)		
<20	10	10
21-25	43	43
26-30	32	32
>30	15	15
SOCIO ECONOMIC STATUS		
Low	16	16
Middle	67	67
High	17	17
ANTENATAL CARE (ANC)		
Booked	43	43
Unbooked	57	57
TIME FROM MARRIAGE TILL THE DATE OF CONCEIVING (Yrs)		
<1	42	42
1-2	13	13
2-5	19	19
>5	26	26
PARITY		
Primiparity	48	48
Multiparity	52	52
MODE OF DELIVERY		
Vaginal Delivery	35	35
Caesarean Section (CS)	65	65
1.Elective	31	31
2. Emergency	34	34

Regarding attendance for antenatal care, 43% had regular antenatal checkups at our setup while 57% were admitted at PIMS in a referred and unbooked status. The bulk of patients (42%) conceived within a year of marriage, while, 13%, 19% and 26% of women became pregnant within 1-2yrs, 2-5yrs and >5yrs of marriage, respectively. 52% and 48% of women were multiparous and primiparous, respectively. Higher rate of Caesarean Sections (65%) was

reported when compared to vaginal deliveries (35%). Further, among Caesarean Sections, the rate of Emergency Caesarean Sections (34%) predominates over Elective Caesarean Sections (31%) due to the nature of tertiary care of our institution.

Table 2 reflects event outcomes of all the pregnancies with gestational age at delivery and neonatal birth weight. TERM gestation was seen with 73% of the prevalence rate. 18% and 9% of babies were delivered preterm and post-term, respectively. 44% of babies were diagnosed with Low Birth Weight (<2.5kg) whereas 56% had appropriate weight for gestational age (≥2.5kg).

TABLE 2: Event outcome of all the pregnant women (N=100)

Category	Percentage (%)	Number of subjects
Gestational Age		
Preterm	18	18
Term	73	73
Postdated	09	09
Birth Weight		
<2.5 kg	44	44
≥2.5 kg	56	56

Table 3 describes the incidence rate of various signs and symptoms experienced by women during the three phases of pregnancy – antenatal, natal and postnatal. 44% women had NVP whereas, 12% had anorexia. 76% of women took regular iron and calcium in their pregnancy while 5% had intolerance to the same. 13% of women came with signs and symptoms of Urinary Tract Infection while *Bleeding per vaginum* as a sign of Threatened Abortion was observed among 5% of the mothers. 22% and 61% of women had ankle edema in their second and third trimester, respectively. 18% of patients had *Discharge per vaginum* as a sign of genital tract infection. 47%, 33% and 14% of mothers reported backache, pain abdomen and leg cramps during their pregnancy, respectively. Increased frequency of urination was the complaint in 50% of the patients. 32% of pregnant women had altered bowel habit in the form of constipation. 16% of mothers experienced headache which may be the one of the sign of initial stage of

preeclampsia or impending eclampsia. 3% of mothers had *Leakage per vaginum* as a sign of Preterm Premature Rupture Of Membrane.

TABLE 3: Prevalence of various signs and symptoms among all the pregnant women

Signs and Symptoms	Percentage (%)	Number of subjects
Nausea and Vomiting of Pregnancy (NVP)	44	44
Regular Iron and Calicum Intake	76	76
Bleeding Per Vaginum	05	05
Discharge Per Vaginum	18	18
Increased Frequency of Urination	50	50
Pain abdomen	33	33
Anorexia	12	12
Ankle edema Second Trimester Third Trimester	 22 61	 22 61
Constipation	32	32
Intolerance to Iron Tablets	05	05
Backache	47	47
Leg Cramps	14	14
Headache	16	16
Urinary Tract Infection (Symptomatic and Asymptomatic)	13	13
Leakage per Vaginum	03	03

DISCUSSION

The new antenatal care models recommend 30-40 minutes for the first visit and 20 minutes for the subsequent visits (WHO, 2002). Awareness of the danger signs and symptoms of obstetric complications among pregnant women and in their communities is considered as the first step in accepting appropriate and timely referral to essential obstetric and newborn care, thus, reducing

the phases of delay (WHO, 1994; Perreira et al., 2002, Killewo et al., 2006). The danger signs occurring during pregnancy are predictive of poor outcome rather than historic risk factors (Berglund and Lindmark, 1999; Pembe et al., 2009).

Our study **(Table 1)** has reported majority of mothers (43%) falls in younger age group (21-25 yrs). The study has also found that more than a half of the mothers (57%) were referred from periphery in an unbooked status with the complicated phase of pregnancy. Various studies have reported that women who are less than 25yrs old and are less educated are more likely to register late and thus falls in an unbooked status (Fawcus et al., 1992; Adekanle and Isawumi, 2008; Chigbu et al., 2009). Higher rate of Caesarean Sections over vaginal delivery was observed during the present study which indicates an increase in the trend of Caesarean Sections. Unnikrishnan et al. (2010) and Kaur et al. (2013) have reported the same trend in their study. Higher number of Emergency over Elective Caesarean Sections observed in the present study has also been supported by Karim et al. (2011). Figure 1 elaborates the several signs and symptoms reported by pregnant women in the current study.

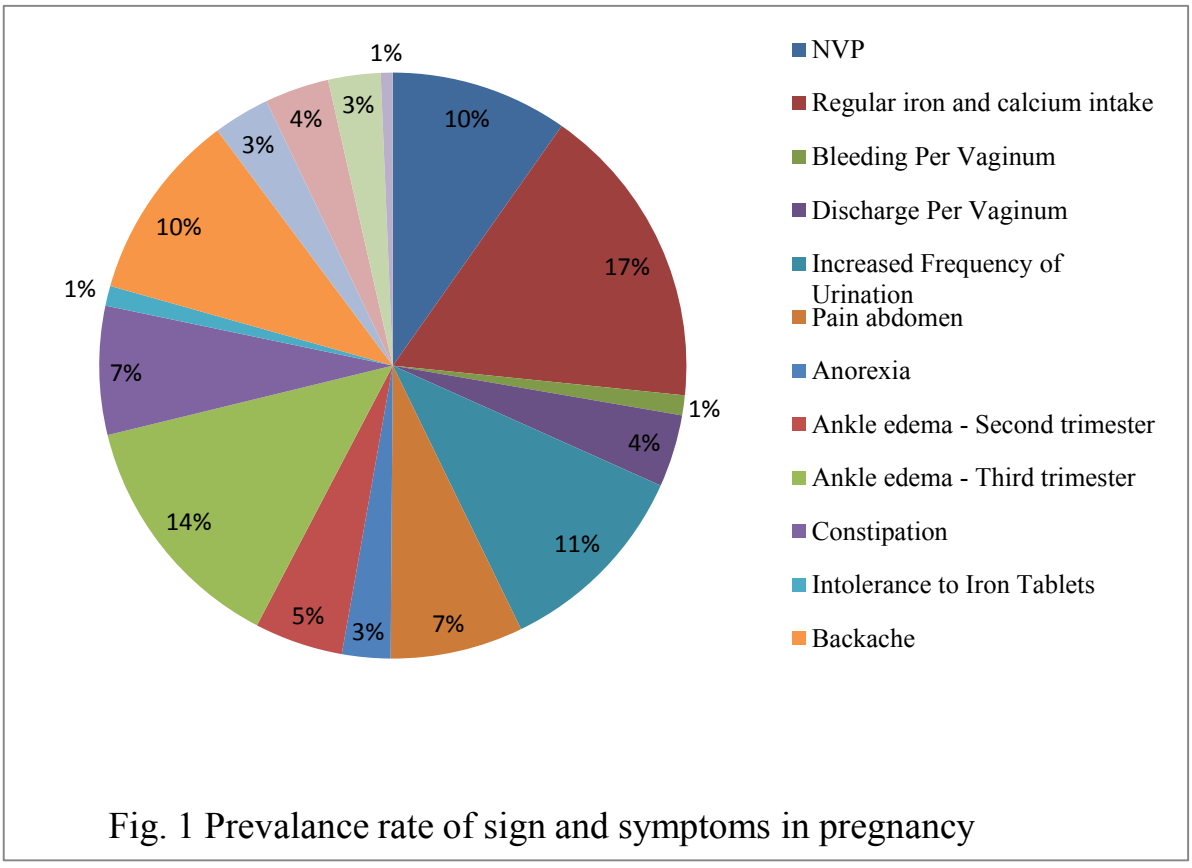

Fig. 1 Prevalance rate of sign and symptoms in pregnancy

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The current study **(Table 3)** has observed NVP among 44% of pregnant women. Higher rate of NVP has been reported in 1st trimester of pregnancy (78.5%) in a study conducted in Canada but its rate decreased to 40.1% at the beginning of the 2nd trimester of pregnancy (Lacasse et al., 2009). Symptoms range from mild nausea (often accompanied by aversions to certain foods) to frequent vomiting and Hyperemesis Gravidarum (Furneaux et al., 2001; Pepper and Roberts, 2006). Optimal management of NVP begins with nonpharmacological approaches, use of ginger, acupressure, vitamin B6, and dietary adjustments. Pharmacological approaches include pyridoxine, doxylamine and pyridoxine combination, antihistamines, phenothiazines, metoclopramide, 5-HT3 antagonist (Ondansetron), anticholinergics, corticosteroids, acid reflux/heartburn pharmacotherapy and rehydration/enteral or parenteral nutrition (Ebrahimi et al., 2010).

The study found *Bleeding per vaginum* as a sign of Threatened Abortion in 5% of pregnant females. The main reasons for vaginal bleeding in early pregnancy are subchorionic haemorrhage, subchorionic haematoma and rupture of a marginal placental sinus (Saurbrei and Pham, 1986). However, in majority of the cases of Threatened Abortion, the bleeding is of unknown origin and usually slight. Most of these pregnancies continue to term with or without treatment. However, the prognostic outcome is better following treatment with bed rest, uterine sedatives, folic acid supplementation and hormonal treatment in the cases of Threatened Abortion with or without the presence of subchorionic hematoma (Dongol et al., 2011).

Discharge per vaginum as a sign of genital tract infection was seen among 18% of pregnant women which has been consistent with the general prevalence rate (6-32%) (Shetty and Davis, 2012). The main causes of vaginal infections during pregnancy include bacterial vaginosis, trichomoniasis, candidiasis (Marai, 2001). It leads to higher risk of late miscarriage, infection of the amniotic cavity, premature rupture of membranes, preterm labor, prematurity, and infant low birth weight (Gondo et al., 2010). Early screening, diagnosis and treatment of genital tract infections in pregnant women would be helpful in reducing complications resulting out of it (Shetty and Davis, 2012).

Urinary Tract Infection (Symptomatic and Asymptomatic) was found in 13% of study subjects. Its occurrence during pregnancy contributes significantly to maternal and perinatal morbidity (Parveen et al., 2011). Low socio-economic status, sickle trait, diabetes mellitus and grand multiparity have been reported as risk factors where each is associated with two-fold increase in the rate of bacteriuria (Sescon et al., 2003). Abortion, Low birth size, maternal anemia, hypertension, preterm labour, phlebitis, thrombosis and chronic pyelonephritis are related to urinary tract infection during pregnancy (Parveen et al., 2011). Thus, early detection and treatment can possibly decrease the consequences of urinary bacteriuria (Schnarr and Smaill, 2008).

Backache was the complaint among 47% of pregnant women in the present study which is approximately the same to the general prevalence rate (50%) (Katonis et al.,2011). The most common cause of backache in pregnancy is odd posture, heavy work and weight lifting. About half of the patients took treatment mainly in the form of rest and analgesia. Chiroptic practice is also common in pregnancy and it gives some relief as well (Kausar et al., 2006). The study conducted in Nigeria by Ayanniyi et al. (2006) has found that a postural modification has relieved the back pain in about 50% of the study subjects across the back pain groups during pregnancy and recommended that rather than dismiss it as trivial, back pain in pregnancy should be attended to as a part of ante-natal care.

The present study has observed constipation in 32% of pregnant women which is consistent with general prevalence rate of 11-38% (Jewell and Young, 2012). Constipation, being the one of the most common complaints in pregnancy, has many factors behind it. When a woman is pregnant, her body goes through a drastic hormonal change and she may become constipated very early in pregnancy (Anderson, 1984; Philip and Crisp, 2000). Another reason for constipation is that the body tends to retain water which leads to harder and drier bowel content, thus resulting in constipation during pregnancy (Johanson et al., 1989; Ashraf et al., 1994). An increased consumption of fruits and vegetables is capable of improving peristaltic activity in the gut, thereby reducing the probability of constipation during pregnancy (Ojieh, 2012).

Leg cramps had 14% of prevalence rate in the studied pregnant mothers. The study conducted in Iran has shown an association of leg cramps with low level of Magnesium and recommended Magnesium supplement for the same (Sohrabvand and Karimi, 2009). The 76% of patients took

regular iron and calcium in our study while 5% had developed intolerance to iron tablets. However, a study done in India has recommended that the deployment of a direct observer to monitor the administration of oral iron supplementation would be a feasible step and helps to improve compliance with oral iron tablets (Bilimale et al., 2010).

Headache was complained by 16% of pregnant females in our study. Most of the time, headaches in pregnancy have benign etiologies and these primary headache disorders are being largely treatable with reassurance, non-pharmacological remedies, and simple analgesics (Dixit et al., 2012). However, a high index of suspicion for serious underlying pathology should be maintained if atypical features are identified on history and/or clinical examination especially if a woman presents with a headache for the first time in her pregnancy in order to institute timely management and prevent significant morbidity and mortality from life-threatening conditions such as eclampsia, stroke (haemorrhagic or thrombotic), and Arterio-Venous Malformations.

Though pregnancy is considered as a physiological condition but it has various signs and symptoms in itself which can make it complicated. Indian government has passed Maternity Benefit Act, 1961 (No. 53 of 1961) which is an act to regulate the employment of women in certain establishment for certain period before and after child-birth and to provide for maternity and certain other benefits. The maximum period for which any woman shall be entitled to maternity benefit shall be twelve weeks which includes six weeks up to and including the day of her delivery and six weeks immediately following the day of delivery (http://pblabour.gov.in/pdf/acts_rules/maternity_benefit_act_1961.pdf; retrieved on Sept 25, 2012).

Most of the studies have been concluded with a low level of awareness of danger signs of obstetric complications among pregnant women (Pembe et al., 2009; Hailu et al., 2010; Ali et al., 2010; Kabakyenga et al., 2011). However, studies have reported that the likelihood of awareness of obstetric danger signs increases with age, number of deliveries, number of antenatal visits, when delivery was at a health institution, and when the mother had been informed of having a risk factor or complication during antenatal care (Pembe et al., 2009). This explains that every woman along with their spouses and community members should be made aware regarding all the information on danger signs of pregnancy, childbirth/labour and the postpartum periods.

CONCLUSIONS

Various unusual signs and symptoms appear during pregnancy due to physiological hormonal changes. If ignored, they may lead to various complications which may prove dangerous for the baby and the mother. Pregnant women should be able to recognize these symptoms and approach for emergency care for the same. Universal Education Programs should be promoted to enhance knowledge of danger signs among pregnant females including their family members.

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