

Frequency of Pelvic Pain and Bleeding per Vaginum in First Trimester of Pregnancy in a Tertiary Care Hospital of Karachi

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Abstract

Objective: The objective of this study was to determine the frequency of pelvic pain and per vaginal bleeding, in the first trimester of pregnancy.

Methods: A total of 150 pregnant women 18 to 35 years in first trimester were recruited in this cross-sectional study, conducted from July 2015 to July 2016. Non-probability sampling technique was used to collect the data. The collected information from patients were entered in pre-designed proforma after taking informed consent. Data was analysed by using SPSS version 20.

Results: The average age of the patients was 26.33 ± 4.23 (range 18-35) years. Frequency of pelvic pain and per vaginal bleeding in first trimester of pregnancy was observed in 29.33% (44/150) and 12% (18/150) respectively. Stratification analysis was performed and it was observed that rate of pelvic pain and per vaginal bleeding was not statistically significant among different age groups. Rate of pelvic pain was significantly high in women with primigravida as compare to multigravida ($p=0.003$).

Conclusion: We found in our sample a significant number of women experiencing pelvic pain and vaginal bleeding in first trimester of their pregnancy. The practitioner must employ sound clinical and diagnostic skills in the management of the patient as early pregnancy complications can cause significant distress for some women and their partners.

Keywords: Pelvic pain, vaginal bleeding, first pregnancy trimester, women, gravidity.

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Introduction

Pelvic pain and per vaginal bleeding in pregnancy is one of the most common presenting complaints of women examined in the emergency department¹.

Although most pregnancies complicated by pain and bleeding tend to progress normally, these symptoms are distressing for a woman, and they are also associated with an increased risk of miscarriage and ectopic pregnancy². Crampy pelvic

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pain is common in early pregnancy because of hormonal changes increased blood flow and rapid growth of uterus. It is common for pregnant women to present with pain in the first trimester and have normal findings on ultrasonography³. But sometimes it can pose a challenge to the clinician and will require prompt and immediate medical attention because symptoms can vary from light painless bleeding to severe pain and bleeding even haemorrhagic shock. There are several causes of lower abdominal pain and per vaginal bleeding (PV) during early pregnancy, some being directly related to pregnancy while others are unrelated medical or surgical conditions⁴.

Pain and vaginal bleeding are experienced by about one in five women during the first trimester of pregnancy². In other studies, it has been estimated

that about 30% of the women complain of lower abdominal pain and 24.2% complain of bleeding during early pregnancy^{5,6}.

Sonography provides information that allows for diagnosis of both pregnancy related pain such as ruptured ectopic pregnancy, miscarriage and pain unrelated to pregnancy such as that seen in appendicitis and nephrolithiasis^{4,7}. In other studies, it has been estimated that about 20% to 30% of women complain of lower abdominal pain or bleeding during early pregnancy. Common causes of pain and bleeding as found on ultrasound include abortions (42.6%), sub-chorionic haematomas (11.5%), ectopic pregnancies (11.5%), molar pregnancies (3.3%), fibromas (3.3%), corpus luteum cyst (1.6%) and normal cases (26.2%)^{2,6}.

National Institute of Health and Care Excellence (NICE) guideline June 2012⁸ on pain and bleeding in early pregnancy emphasises the need of research on this issue to improve maternal care. The guideline also emphasises the need for establishment of early pregnancy assessment unit in maternity care hospitals and its regular national audit to improve physical and emotional health of pregnant women which is affecting the pregnancy outcome.

Studies consistently show an association between first trimester bleeding and adverse outcome (e.g., miscarriage, preterm birth, premature rupture of membranes, foetal growth restriction) later in pregnancy^{9,10}. The prognosis is best when bleeding is light and limited to early pregnancy, i.e., less than 6 weeks of gestation⁹⁻¹¹. The prognosis worsens when bleeding is heavy or extends into the second trimester⁹⁻¹¹. However, no change in pregnancy management is indicated for women with first trimester bleeding. There are no effective interventions, but women can be reassured of the low likelihood of adverse outcome.

After robust literature searches, no local study regarding frequency of pelvic pain and bleeding per vaginum in first trimester of pregnancy was found, this provides a strong rationale to conduct this

study. It is important to estimate the disease burden so further studies can be conducted to elicit a better understanding of this phenomenon. In addition, this study will emphasise on early diagnosis and suggest strategies for treatment to overcome this problem. The objective of this study was to determine the frequency of pelvic pain and per vaginal bleeding in first trimester of pregnancy.

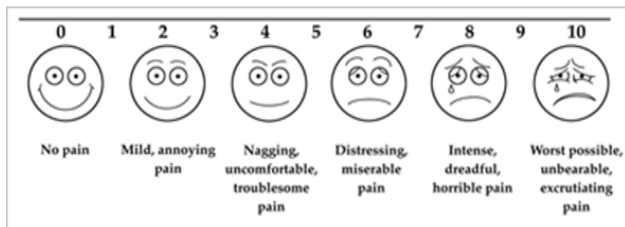
Methods

The study design was cross-sectional. The setting of this research was Dow University Hospital, Dow International Medical College (DIMC), Karachi, Pakistan. The study was conducted for one year from July 2015 to July 2016. Sample size was calculated by using World Health Organization (WHO) sample size calculator taking proportion of vaginal bleeding in 1st trimester of pregnancy 24.2% (margin of error $d=7\%$, Confidence Interval (CI) 95%, level of significance 5%), the estimated sample size was $n=150$. Sampling technique was non-probability consecutive sampling technique and sample selection had the inclusion criteria that: women of age 18 to 40 years with pregnancy test positive or confirmed pregnancy on ultrasound were included in this study, women with gravida 1 to 3 were included, pregnant women with first trimester.

Exclusion criteria was those women who were not pregnant, women whose pregnancies are at gestational age more than 12 weeks, patients who had pelvic pain since before their current pregnancy and patient with complain of vaginal bleeding due to direct trauma.

Pelvic pain is defined as an unpleasant sensory discomfort in terms of pain experienced by patient in lower abdomen including hypogastrium, right and left iliac fossa, perineal region and lower backache which may radiate to formerly mentioned areas. Since pain is a clinical parameter difficult to assess, visual analogue scale (VAS) was used in this study to measure pain that a patient feels ranges across a continuum from no pain to an extreme amount of pain. Score from 0 to 1 was la-

belled as no pain and score from 2 to 10 was labelled as pain.



Bleeding refers to bleeding from vagina either in form of spotting or continuous per vaginal bleeding assessed clinically.

First trimester of pregnancy is defined as duration of pregnancy for 4th week of gestation till 12 completed weeks calculated either by date of last menstrual period or ultrasonography.

After approval of synopsis from College of Physicians and Surgeons of Pakistan, data was collected on preformed proforma. Patients who fulfilled the inclusion criteria were included in this study after taking verbal informed consent. All the pregnant women in 1st trimester of pregnancy as mentioned in operational definition were included to assess pelvic pain and per vaginal bleeding in terms of frequency. All the assessment was done under supervision of consultant having more than five years of experience. All the collected information from patient was entered in pre-designed proforma.

Data was analysed by using SPSS version 20. mean, standard deviation (SD) and confidence interval (CI) was calculated for age, gestational age and gravidity and percentage was calculated for pelvic pain and bleeding. Effect modifier was controlled through stratification of age, gestational age and gravida. Post stratification applying chi-square test using $p\text{-value} \leq 0.05$ as significant.

Results

A total of 150 pregnant women in first trimester were recruited in this study. There were 44.67% women below and equal to 25 years of age, 36.67% were between 26 to 30 years of age and

18.67% were above 30 years of age as shown in Table 1. The mean age of the patients was 26.33 ± 4.23 years, Gravida status of the women is also given in Table 1. There were 38.67% (58/150) women with primigravida and 61.33% (92/150) with multigravida. Table 1 also shows that the mean gestational age at which women presented was 8.57 ± 2.20 the range being from five to twelve weeks of gestation. Frequency of pelvic pain in the first trimester of pregnancy was observed in 29.33% (44/150). Fig. 2 shows frequency of vaginal bleeding in first trimester of pregnancy in the study group as 12% (18/150) of women. Table 2, also shows that frequency of vaginal bleeding in first trimester of pregnancy in the study group was not statistically significant among different age groups ($p\text{-value} = 0.309$). Similarly, frequency of vaginal bleeding was also not significant between gestational age groups ($p\text{-value} = 0.782$). Vaginal bleeding was also not found to be significantly different between primigravida and multigravida.

Stratification analysis was performed and it was observed (Table 3) that frequency of pelvic pain was not statistically significant among different age groups ($p\text{-value} = 0.61$). Similarly, frequency of pelvic pain was also not significant between gestational age groups ($p\text{-value} = 0.96$). However, pelvic pain was significantly high in women with primigravida as compared to multigravida ($p\text{-value} = 0.003$), (Table. 4).

Table 1. Descriptive statistics of characteristics of women (n= 150)

Descriptive Statistics	Age (Years)	Gestational Age (Weeks)
Mean ± SD	26.33 ± 4.23	8.57 ± 2.20
95% confidence interval for mean	Lower Bound	25.64
	Upper Bound	27.01
Range	18-35	5-12

Table 2. Descriptive statistics of gravidity

Type of gravida	no	%
Primigravida	58	38.6
Multigravida	92	61.3

Table 3. Bleeding per vaginum with respect to maternal characteristics

Age group =Years	Per vaginal bleeding N= 150		p-value	Chi square
	Yes	No		
≤ 25 n= 67	9 (13.4%)	58 (86.6%)	0.309	2.35
26 – 30 n= 55	8 (14.5%)	47 (85.5%)		
>30 n= 28	1 (3.6%)	27(96.4%)		
Gestational age				
≤ 9 weeks n= 89	10 (11.2%)	79(88.8%)	0.728	0.12
10-12 weeks n= 61	8 (13.1%)	53 (86.9%)		
Gravida				
Primigravida n= 58	9 (15.5%)	49 (84.9%)	0.29	1.108
Multigravida n= 92	9 (9.8%)	83 (90.2%)		

Table 4. Frequency of pelvic pain in first trimester with respect to maternal characteristic.

Age group =Years	Pelvic pain		p-value	OR
	Yes	No		
≤ 25 n= 67	20 (29.9%)	47 (70.1%)	0.61	0.95
26 – 30 n= 55	14 (25.5%)	41 (74.5%)		
>30 n= 28	10 (35.7%)	18 (64.3%)		
Gestational age				
≤ 9 weeks n= 89	26 (29.2%)	63 (70.8%)	0.96	0.002
10-12 weeks n= 61	18 (29.5%)	43 (70.5%)		
Gravida				
Primigravida n= 58	25	33	0.003	8.65
Multigravida n= 92	19	73		

Discussion

Safe motherhood is still a big challenge that has yet to be addressed. Low level of maternal care prevails and continues to threaten both mothers¹² and their children in infancy and early childhood. Health depends on care, and the utilisation of health care in developing countries allegedly depends on the availability, affordability and accessibility of services¹³. Up to 25% of all women in the early stages of pregnancy will experience vaginal bleeding or spotting. Even more sobering, half of those women will go on to experience intrauterine foetal demise prior to the 20th week¹⁴. This causes serious impact on life of women like anxiety and depression¹⁵. Bleeding in early pregnancy may be due to implantation bleed, miscarriage and ectopic pregnancy. It can be due to systemic disorder, liver disease, local causes like polyp and cervical ectopy¹⁶.

A total of 150 pregnant women with first trimester were recruited in our study. There were 44.67% women below and equal to 25 years of age, 36.67% were between 26 to 30 years of age and 18.67% were above 30 years of age. In this study, there were 38.67% primigravida and 61.33% were multigravida. Similar findings were found in a study done by Reem Hasan et al¹⁷ in their study of 45¹⁰ women ranged in age from 18 to 45 years reported about one-third were pregnant for the first time. As the common parity group in our study was multigravida with mean age 26.33 ± 4.23 years close to the results of study conducted at Liaqat Medical University Hyderabad¹⁸.

Abdominal pain in pregnancy is very common. Many of the complications of early pregnancy present with some form of abdominal pain. There are several causes of abdominal pain during early pregnancy, some being directly related to pregnancy while others are unrelated medical or surgical conditions.

In our study, we found the frequency of pelvic pain in first trimester of pregnancy was observed in 29.33%. A high percentage of women experience low back and pelvic pain (LBPP) during pregnancy. Wang et al. in 2004 studied 1000 pregnant women and they reported that 41% of this population had incurred pelvic pain during their pregnancy¹⁹. Stratification analysis was performed and observed that rate of pelvic pain was significantly high in women with primigravida as compare to multigravida. The point prevalence of pelvic pain by primigravida has been reported as 58.5% in United States and 51% in Sweden^{6,7}. There is little information about pregnancy-related pelvic girdle pain (PPGP) during pregnancy in Asian countries. To our knowledge, there are few studies about the prevalence of pelvic pain in Africa and Asia. The reported prevalence of pelvic pain in these studies ranged from 38% to 89.9%^{20,21}. Because of large variation in the study designs and terminology, a true comparison between our results and these studies is not possible.

Vaginal bleeding is a common first trimester complication, often considered to be a sign of a problem in pregnancy. Ananth et al reported in their study that bleeding has been related to preterm birth, low birth weight, and small-for-gestational age infants. Similar finding has been reported by William MA et al^{22,23}. These studies also reported chances of complications are more if bleeding per vaginum is heavy.

Finding ways to reduce early trimester bleeding, can reduce complications like preterm birth and low birth weight baby. We found frequency of per vaginal bleeding in first trimester of pregnancy was 12%. Right From The Start (RFTS) is an ongoing community-based pregnancy cohort study²⁴ that began enrolment of pregnant women in 2000, found bleeding prevalence is highest around gestational week 5-8. The subset of heavy bleeding episodes has a similar distribution to all bleeding episodes. The timing of this peak coincides with the timing of important phases of placental development. A hormonally functional placenta is required for the luteal to placental shift in progesterone production that

occurs around gestational week 7. Additionally, around the 10th week of pregnancy, the trophoblast blockage of the spiral arteries breaks down, remodelling of the arteries occurs, and the resulting blood flow to the developing placenta dramatically increases the oxygen tension.

Healthcare professionals providing care for women with early pregnancy complications in any setting should be aware that early pregnancy complications can cause significant distress for some women and their partners. The information and support provided to women should be in a sensitive manner, taking into account their individual circumstances and emotional response.

Our study is providing the magnitude of the problem of early pregnancy bleeding and pain in pregnant women attending the tertiary hospital clinic. As these symptoms are linked significantly with adverse outcome the importance of early pregnancy assessment unit equipped with proper staff and ultrasound is emphasised by Royal College of Obstetricians and Gynaecologists guidelines 2012²⁵.

It is difficult to arrive at clinical diagnosis in cases of pregnant women presenting with lower abdominal pain due to physiological changes of pregnancy. The sign of guarding in peritonitis may not be clearly appreciated due to decrease in elastic fibres in pregnancy. Furthermore, location of appendix may be changed due to gravid uterus and Total Leukocyte Count (TLC) may rise up to 16000 per microliter (mCL) during pregnancy. Careful assessment of these symptoms is very important to exclude life-threatening conditions. Poor outcomes are linked with inappropriate management of these cases.

Organising the antenatal services right from the early pregnancy and bringing it to a level of standard care is the responsibility of health authorities. This is a type of preventive strategy which will minimise cases of severe acute maternal and perinatal morbidity coming to emergency unit of maternity hospitals in developing countries. These cases

are of great financial burden consuming a large part of health budget. The early pregnancy units will help to reduce maternal and perinatal morbidity by early identification and prompt treatment. These will be cost-effective and time and life-saving units.

Conclusion

We found in our sample a significant number of women experiencing pelvic pain and vaginal bleeding in first trimester of their pregnancy. Given the numerous causes of early pregnancy vaginal bleeding and pelvic pain, the practitioner must employ sound clinical and diagnostic skills in the assessment, workup, and management of the patient. Early pregnancy assessment unit should be setup in maternity care hospitals and its audit at regional and national level should be done to improve pregnancy outcome.

Conflict of Interest

Authors have no conflict of interests and no grant/funding from any organisation for this study.

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