ORIGINAL ARTICLE

PATTERN AND DETERMINANTS FOR TERMINATION OF PREGNANCY IN LAHORE, PAKISTAN

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ABSTRACT

Background and Objective: Abortion is defined as expulsion or extraction of a fetus before 28 weeks of gestation with no evidence of life. Worldwide 40 – 50 million abortions occur annually and 125,000 abortions per day. The Objective of this study was to assess the pattern and determinant of abortions in a private tertiary care teaching hospital of Lahore.

Methods: A cross sectional survey was conducted in Fatima Memorial Hospital Lahore from March to August 2015 using record files of Gynecology Department for last five years. A Non-probability consecutive sampling technique was used to include 514 patients. Data was collected using questionnaires and analysed using SPSS 20.

Results: Mean age of (514) participants was 27.66 ± 5.06 years. History of abortion within first 5 years of marriage was reported in 55.43%. 331 females (64.39%) had gestational amenorrhea for more than 15 weeks. At time of presentation, 35.89% had pain and 51.41% had per vaginal bleeding.32.26% had previous history of abortion. Associated co-morbidity was observed in 22.56% of the patients. Most common of them was Hypertension/Pre-eclampsia (53.44%) and Diabetes (31.03 %).Out of 514, 225 abortions were done due to maternal indications and 214 due to fetal indications. Majority of the abortions were Induced size 109 (21.21%). Most common post-partum complication was bleeding reported in 49 (86%) cases. Mean hospital stay of the patients in this study was 2 ± 1.34 days.

Conclusion: Major fetal indications included multiple malformations and abnormal implantation while maternal indications included hypertension/Pre eclampsia/Eclampsia and diabetes.

Key Words: Abortion, determinants, Pattern.

INTRODUCTION

World Health Organization defines abortion as expulsion or extraction of a fetus weighing 1000 grams approximately, equivalent to 28weeks of gestation or as termination before 24 weeks of gestation with no evidence of life.[1] Worldwide abortions are categorized differently, which may include spontaneous and induced abortion.[2] Induced abortion may be divided into legal (on therapeutic basis) or illegal. In Pakistan, it is legal only when done for medical purposes which maybe life cautionary conditions of pregnant women or fetus with some chromosomal abnormalities. If it includes none of these reasons then the abortion is stated to be illegal and it is done on patient's request.[3] Critical complications of induced abortions include sepsis, haemorrhage, visceral injuries and obscured complications are ectopic pregnancy, pelvic inflammatory disease and psychotic complications.[4] Septic abortion is infection of the uterus, its contents and appendages. Any abortion may produce a septic sequel but the consequences of sepsis are most common and of severe degree in illegally induced abortions.[5]

Worldwide estimated 40–50 million abortions occur annually and approximately 125,000 abortions per day. During 2008 almost 43.8 million abortions occurred worldwide in comparison with 41.6 million in 2001 and 45.6 in 1995.[6] In developed countries the abortion numbers fell by 0.6 million (24/1000) but in developing countries increased by 2.8 million (29/1000). In Asia abortion rates reported are 26-36 per 1000 and South Asia having the highest abortion rate (36 per 1000).[7] In Pakistan 890000 induced abortions are performed annually with annual abortion rate of 29 per 1000 women age 15 – 49 years.[8]

The abortion rates are increasing alarmingly in Pakistan.[9] Maternal morbidity and mortality due to complications of abortions are of major public health concerns in many countries as well as in Pakistan[10]. There are diverse causes of seeking abortions which are of varied socioeconomic concerns. Some of these include poverty, no support of spouse, severance of education or unemployment, family planning predilection, contraceptive failure, disease condition or other health issues that may affect their own fitness or their

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baby´s health.[11,12] Social determinants of health play an important role in the outcome of unintended or unplanned pregnancies.[13]

In Pakistan complications of abortions results in 4.7% to 12.7% maternal deaths.[14] Genetic anomalies such as chromosomal abnormality, advanced maternal age and history of recent losses as well as infections to mother, ectopic pregnancy are known to play critical role.[15,16] In the third trimester most abortions are due to severe malformations due to genetic abnormalities.[17] Adverse prenatal outcomes are also due to teen age pregnancy.[18] Poverty, illiteracy and multi parity are strong determinants of induced abortion in some parts of the world.[19] According to WHO, the chances of developing serious complications among women undergoing unsafe abortions is 10 – 50%.[20] This study was conducted to assess the pattern and determinants for termination of pregnancy in females coming to a tertiary care hospital of Lahore.

METHODOLOGY

A cross sectional survey was conducted at Fatima memorial hospital Lahore, over a period of six months i.e. March to August 2015 on the record files of women coming to Gynecology /Obstetrics Department during 2010 – 2015. Through a non-probability consecutive sampling technique a sample of 514 patients was collected. Files belonging to women who presented for termination of pregnancy at gestational age of less than 28 weeks i.e. before the age of viability were considered. All the information was compiled in a pre formed questionnaire including quantitative closed ended questions. Data was analysed on SPSS version 14 and results were presented in the form of frequency tables, Bar and Pie charts.

RESULTS

The socio-demographic profile of these 514 participants showed that mean age of these participants was 27.66 ± 5.06 years. Maximum number of abortion cases 200 (38.87%) were reported between age 25-29 years, followed by age of 20-24 (24.80%) and 30-34 years (24.22%). Among them 99.2% of these were General cadre patients. The mean duration of their marriage was 5 ± 3.62 years.

At the time of termination, majority of the patients 331 (64.39%) had gestational amenorrhea for more than 15 weeks. Mean duration of gestational amenorrhea was 17.37 ± 5.63 weeks. Out of the 514 females who presented with symptoms, 264 (51.41%) complained of per vaginal bleeding, 184 (35.89%) had pain and 36 (7.06%) experienced pre-mature rupture of membranes. One sixty six (32.26%) of the participants had previous history of miscarriages (Table 1).

Among of 514 patients, 116 (22.56%) suffered from co-morbid conditions, most common of which were Hypertension (53.44%) and Diabetes (31.03%). One twenty six patients (24.51%) were taking drugs which were mostly dietary supplements 75 (59.52%) and medication for hypertension 13 (10.31%) and diabetes 10 (7.93%).

Table 1: *Maternal History.*

Duration of Gestation Amenorrhea	*N*	*%*
1 – 7 weeks	53	10.26
8 – 14 weeks	130	25.35
15 – 21 weeks	156	30.38
22 – 28 weeks	175	34.00
Presentation		
PV Bleeding	264	51.41
Pain	184	35.89
Pre mature rupture of membranes	36	7.06
Infection	25	4.84
History of previous abortions	166	32.26
History of pelvic surgery	24	4.76
History of PID	7	1.45

The causes for termination of pregnancy were divided into Maternal, Placental and Fetal indications. Hypertension (30.66%), Ectopic pregnancy (16.44%), Diabetes (15.11%) and premature rupture of membranes (11.55%) were the leading maternal indications for termination of pregnancy. Among placental causes, placenta previa (20%) and placental insufficiency (18.67%) were the major abnormalities causing miscarriage. Intra uterine deaths were reported in (32.24%) and multiple congenital malformations (15.88%) were the major fetal indications of abortions (Table 2).

While assessing the techniques which were used for termination of pregnancy at this hospital it was observed that abortifacient drugs were used in 235 (45.77%) cases, while Dilatation and Curettage were done in 210 (40.80%) cases. Other methods included vaccume aspiration (5.2%), Laprotomy (4.73%) and use of prostaglandins (3.48%).

In the post abortion period, most common complication observed was bleeding (86%) followed by infection, pain etc (Fig. 2).

Out of 514 aborted fetuses, 284 (55.34%) were male and 230 (44.66%) were female showing a greater trend of abortion with male foetous.

DISCUSSION

The concurrent study observed that higher incidence of abortions occurred in women of age group 25 – 29 years and average age of mothers at the time of termination of pregnancy was 27.66 years. According to a

Table 2: *Causes of termination of pregnancy.*

Maternal Indications	n	%
Hypertension/PreEclampsia/Eclampsia	69	30.66
Ectopic pregnancy	37	16.44
Diabetes	34	15.11
Premature rupture of membranes	26	11.55
Anemia	18	8
Hepatitis (B& C)	9	4
Uterine abnormality	5	2.22
Molar pregnancy	4	1.78
Misc.*	23	10.22
Total	225	100.0
Placental / Amniotic / Cordal Causes		
Placenta previa	15	20.00
Placental Insufficiency	14	18.67
Oligohydroamnios	12	16.00
Anhydroamnios	8	10.67
Subchorionic Hemorrhage	8	10.67
Misc.*	18	24
Total	75	100
Fetal Indications	N	%
Intra uterine death	69	32.24
Multiple congenital Malformations	34	15.88
Intra uterine growth retardation	32	14.95
Anencephaly	13	6.07
Skeletal dysplasia	11	5.14
Nephropathy	8	3.73
Spina bifida	7	3.27
Meningeocele	6	2.80
Hydrocephaly	5	2.33
Misc.*	29	13.55
Total	214	100.0

Miscellaneous:
Maternal Indications: *SLE (1.33%), Trauma (1.33%), Infection (1.33%), Fibroids (1.33%), Asthma (0.89%), Rubella (0.44%), DIC (0.44%), Hemophilia (0.44%), Hypovolemic shock (0.44%), Epilepsy (0.44%), Appendectomy (0.44%), Renal failure (0.44%), Ascites (0.44%), Blighted Ovum (0.44%).*

Placental / Amniotic / Cordal Indications: *Chorioamnionitis (9.33%), Polyhydroamnios (6.67%), Amniotic band (2.67%), deformed sac (2.67%), Cord prolapse (1.33%), Retrochorionic haemorrhage (1.33%).*
Fetal Indications: *Thalassaemia (1.86%), Congenital heart defect (1.86%), Hydropsfetalis (1.86%), Meningoencephalocele (1.40%), Dysplastic kidney (1.40%), Polycystic kidney (0.93%), Renal agenesis (0.93%), deformed Twin pregnancy (0.93%), Dysplastic chest (0.47%), Esophageal atresia (0.47%), Arnold-Chiari Malformations (0.47%), Dilated lateral ventricles (0.47%), Hydronephrosis (0.47%).*

study conducted in Iran, mean maternal age at time of abortions was 28.3 years.[21] Another study in Pakistan indicated that most prone group to abortions is women of age group 25 – 35 years.[22] On contrary, other studies speculate age as an independent risk factor for termination of pregnancy with the highest incidence among women belonging to extreme age groups, below 20 and above 40 years.[23]

This study holds an advantage of highlighting the impact of risk factors indicated in patient's history including any co-morbidity, patient's obstetrical history as well as patient's presenting complaints. Time is a critical factor in termination of pregnancy. Delay in seeking abortion threatens maternal health as with advancing gestation the risk of mortality with abortion increases significantly.[2] In the study 64.38% of pregnancies were terminated after 15 weeks of gestation on an average at gestational age of 17.37 weeks. In comparison, the most of the abortions were performed in 17.54 ± 6.06 weeks of gestation in a study conducted in Thiland.[24] Termination of pregnancy for fetal anomalies were mostly done before 24 weeks of gestation in European countries.[25]

Vaginal bleeding, abdominal pain, infection and shock are common signs and symptoms that often foretell pregnancy loss.[2] Bleeding per vagina was found as presenting complaint of patients in 51.41% cases. In a study conducted by Garcia et al bleeding heralded spontaneous abortions in 85.9% of cases.[23] Adverse events indicated in patient's obstetric history like spontaneous abortion significantly increases the risk of subsequent pregnancy loss.[26] On review of patient's obstetric history 32.26% of women were found to have a history of previous miscarriage. A study from Amhara also indicated the history of abortions in 13.2% of women finding a positive association with positive history of recurrent abortions.[27]

Factors like pelvic inflammatory diseases, gynecological surgeries and use of contraceptive methods prior to conception have an association with subsequent ectopic pregnancy.[28] This research identified pelvic inflammatory disease and a history of pelvic surgery in 1.45% and 4.76% of the women seeking abortion.

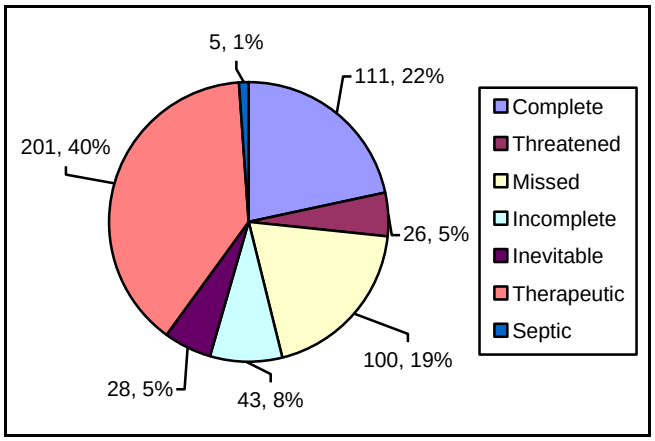

Fig. 1: *Shows the type of abortion done to expel products of conception, Induced abortion 111 (22%) being the most common one.*

Maternal diseases risk pregnancy and are also associated with congenital malformations.[29]In the study about 22.56% of women seeking termination of pregnancy suffered an associated comorbidity, predominantly hypertension / pre eclampsia / Eclampsia (53.44%) and diabetes (31.03%). Hypertension and diabetes accounted for pregnancy loss in 30.66% and 15.11% women. Supporting these findings previous literature suggests that hypertension during pregnancy especially preeclampsia is predictive of various adverse outcomes of pregnancy including intra-uterine growth retardation, intra-uterine fetal demise, stillbirths and maternal mortality.[30] Moreover, results from a cohort study indicated higher incidence of spontaneous abortions among patients with insulin resistance.[31]

Ectopic pregnancies, abnormalities related to placenta and amniotic fluid also accounted for pregnancy loss in some cases. In a study conducted in Iran abnormalities related to amniotic fluid and placenta were identified as strong predictors of miscarriages.[26]

Among fetal causes congenital anomalies are an important indication for termination of pregnancy. Garne et al analysed nineteen registries of congenital anomaly in 12 European countries over a period of five years to determine prevalence of termination of pregnancy for fetal anomalies. Fetal anomalies mentioned in the study were neural tube defects, congenital heart defects, omphalocoele, bilateral renal agenesis and skeletal dysplasia.[25] Similar anomalies were indicated by a study conducted in Iran.[21] In this study among

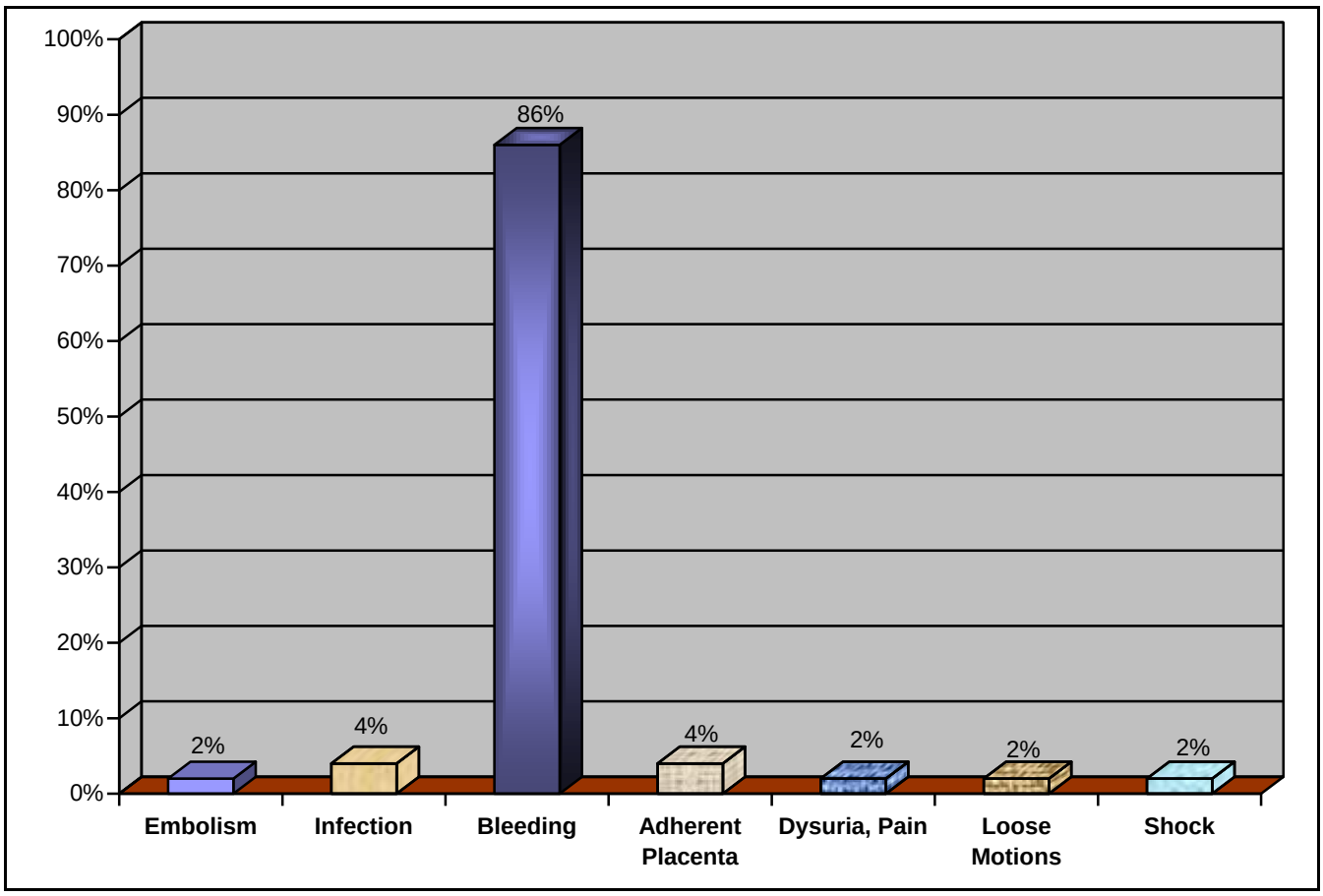

Fig. 2: *Post-abortion Complications.*

fetal indications intrauterine demise was most common. Other significant causes, including multiple malformation and CNS abnormalities (Spina bifida, anencephaly) were in accord with those mentioned in the earlier studies. However, a major fetal indication, chromosomal abnormalities was not present, as genetic testing is not routinely done. Early diagnosis of fetal anomalies is crucial as in Canada an increase in prenatal diagnosis and termination of pregnancy for fetal anomalies has resulted in an overall decline in infant mortality.[32]

Majority of the women underwent induced abortions 21.21% (including therapeutic abortions) for varied reasons. However, 19.46% of women had missed abortion following diagnosis of fetal intrauterine demise on ultrasound. In contrast according to a study conducted in Amhara spontaneous abortions were 38.1% and 4.4% in first and second trimester. However, induced abortions were 28.2% and 19.2% in first and second trimester.[26] In Pakistan about 2.25 million women had induced abortions in the year 2012 with national abortion rate of 50 per 1000 women 15 – 49 years old.[33]In Pakistan wanted fertility and total fertility (total fertility rate 3.8 children per women) have declined over a decade, but use of contraceptive method remains low to thirty five percent, with 37% of women discontinuing use of contraceptive method within less than 1 year. Moreover, unmet needs for contraception are still high (20.1%).[34] All these factors confer a high risk of unwanted pregnancy to women. In Pakistan an estimated 42 million pregnancies (46% of total pregnancies) are unintended and of these most (54%) culminate as induced abortions.[33]Local researches in Pakistan have revealed that induced abortions (for sex selection, family planning and unintended pregnancy) are practiced in our society but remains clandestine.[22]

Both medical and surgical procedures are practiced for termination of pregnancy.[2] Abortifacient drugs were offered to 45.77% women where 40.80% of women had Dilatation and Curettage. Also abortifacient drugs are effective for medical induction of abortion in early pregnancy, but delay may necessitate surgical intervention.[24] In another study surgical methods were preferred to a medical induction on professional decisions.[35]

Abortions performed by unskilled personnel result in serious complications.[2] In Pakistan nearly every 1 of 6 pregnancies is terminated in an unsafe manner.[36] According to an estimate a total of 622,600 women were treated for post abortion complications following induced abortion in Pakistan (2012).[33] However in the study only 57 cases reported complications indicating safe abortion practice at hospitals. Of these cases majority had bleeding. Haemorrhage is the most common and life threatening complication that demands prompt managment.[2]

There was a higher incidence of male child abortion (55.34%), however aborted female fetuses were 44.66%. On the contrary, a study indicated that 47% of fetuses with developmental anomalies were females.[37] In another study conducted for analyzing cases of anencephaly in India in 2012, female fetuses outnumbered male fetuses.[38] This finding also negates termination for sex selection, when induced abortions are practiced.

In the study mean duration of hospital stay was 2 days. Similarly, in a study conducted in Thailand mean duration of hospital stay following therapeutic abortions was 2.15 ± 1.77 days.[24]

It is ***concluded*** that Leading causes of abortion were hypertension, ectopic pregnancy, diabetes, placenta Previa and Congenital malformations. Techniques mostly used for abortion were abortifacient drugs and Dilatation and curettage.

RECOMMENDATIONS

Major causes of abortions include maternal co morbidities, placental and cordal causes and congenital malformations in fetus. Proper antenatal care and screening of high risk pregnancies can help us to detect and mange these causes effectively.

Contribution of Authors

MAA: SPSS compilation and results. ZZ: Write-up of discussion. IM: Conceptualization, Questionnaire development, Write-up. AJ: Write up of Introduction. AA: Introduction and questionnaire development. AK: Data collection and Compilation, Results write-up. SA: Write-up of methodology and Data Collection.

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