ORIGINAL ARTICLE

The Determinants and Outcomes of Second Trimester Abortion at the University Teaching Hospital

M. Muyuni[1], B. Vwalika[1], Y. Ahmed[1]

[1]Department of Obstetrics and Gynaecology; University of Zambia School of Medicine; Lusaka, Zambia

ABSTRACT

Background: Mid trimester abortion constitutes 10-15% of all induced abortions worldwide and accounts for the majority of complications. In Africa, studies demonstrating the proportion of second trimester abortions are few. However to appropriately intervene with a view to reducing the morbidity and mortality due to mid trimester abortions, the determinants in our setting must be established as well as the outcomes of uterine evacuation in this trimester. The aim of this study was to explore the determinants and outcomes of second trimester abortions at UTH.

Design: Cross sectional non interventional descriptive study.

Setting: University Teaching Hospital, a tertiary referral hospital in Lusaka, Zambia

Population: Pregnant women requiring second trimester abortion care.

Methods: A total of 145 second trimester cases were seen, involving women aged 13-46 years of age either requesting termination of pregnancy or presenting with spontaneous or induced abortion. The enrolled study participants all underwent a standard clinical assessment during which their respective clinical findings were recorded on data sheets. Data analysis was done using SPSS version 17.

Results: The point prevalence of second trimester abortion was 15.3%. The mean frequency of abortion per patient was 1. The index abortion was for a first pregnancy in 84% of the women. Out of 145 women who were admitted 119 (82.1%) were linked to spontaneous abortions, 16(11%) with medically/surgically induced abortion and 10(6.9%) with self-induced abortions. More women, 128(88%) were not using some form of contraception to avoid pregnancy. Few, 17(12%) actually used some form of contraception prior to index pregnancy. Five (3.4%) out of 26 who had induced abortion had desired pregnancy. Of the delay factors, the most frequent was conflict with partner. Amongst those who had spontaneous abortion, illness was reported as most frequent determinant (49.7%). It was observed that there was no statistically significant association between seeking care and with any delay factors. With regard to standard of care or health system factors, overall 89% were provided with appropriate uterine evacuation method while the rest were not. Fifty percent did not receive analgesia. The mean time between expulsion of fetus and uterine evacuation was 4.31 hours. Complications noted included uterine perforation, hemorrhage, cervical or vaginal lacerations, shock and even death.

Conclusion: The determinants of the second trimester abortion cases at the University Teaching Hospital are social, economic, health system factors, trauma, illness and unknown factors. The outcomes of second trimester abortion in terms of complications are varied. These are due to patient factors and methods used for uterine evacuation. The outcomes included uncomplicated complete abortion, retained products of conception, haemorrhage, uterine perforation, pain, shock, infection, lacerations, delayed vaginal bleeding and death. The methods of uterine evacuation varied from patient to patient but the overall outcome of the patient was not significantly affected by this.

Key Words: *Second trimester,Abortion, determinants and outcomes.*

Abbreviations and Acronyms

CAC - Comprehensive Abortion Care
CO3 - Emergency Gynecology admission ward
DHS - Demographic and Health Survey
MOH - Ministry of Health
MVA - Manual Vacuum Aspiration
RCOG - Royal College of Obstetricians and Gynecologists
Rh - Rhesus
TOP - Termination of Pregnancy
UNICEF - United Nations Children's Fund
UTH - University Teaching Hospital
WHO - World Health Organization

INTRODUCTION

Throughout history, women have sought to terminate unwanted pregnancies in spite of the legal standing of abortion. Women have been willing to risk their health, their future fertility, their social standing and even their life, in often desperate attempts to end unwanted pregnancies (Shain, 1986). Worldwide, induced abortion is the oldest and one of the most commonly used methods of fertility control. Abortion techniques have varied greatly over time and across cultures.

Millennium Development Goal 5 states that maternal mortality should be reduced by three quarters between 1990 and 2015. Actions to achieve this goal must include prevention of abortion-related maternal deaths as globally about 13% of these deaths are caused by unsafe abortions and most of them occurring in the second trimester (WHO, 2007). It is also a cause of maternal death that can be relatively easily reduced with the right interventions. About 210 million pregnancies occur each year throughout the world. It is estimated that 46 million of these pregnancies end in abortion: 36 million in developing countries and 10 million in developed countries.

In the case of Zambia, the adoption of appropriate strategies to reduce maternal mortality and complications is especially important, because in this country up to 30% of maternal deaths can be attributed to abortion. Such a high proportion of maternal deaths resulting from abortion (most of it being unsafe) calls for a response from the professionals and policy makers responsible for women's care in Zambia. A focused intervention by the relevant stakeholders however would require that the determinants whether social, economic, health system or other reasons for second trimester abortion be established. The outcomes of these abortions are equally important to reinforce the need for intervention. The outcomes would include uneventful evacuations, complications such as hemorrhage, incomplete abortion, shock and even death. Abortion was legalized in Zambia in 1972. The Standards and Guidelines for Reducing Unsafe Abortion Morbidity and Mortality outline legal provisions and guidelines for implementation of safe abortion care services.

It must be noted that the Termination of Pregnancy Act applies as far as 28 weeks of pregnancy. There is no formal position on the upper limit for 2nd trimester termination of pregnancy in Zambia above which termination cannot be performed. All cases above 13 weeks gestation should only be managed in a unit staffed by a specialist or trained medical officer in consultation with a gynecologist as it requires providers with special training and experience (MOH 2009).

Mid trimester abortion constitutes 10-15% of all induced abortion worldwide and accounts for majority of complications (WHO, 1997). In Africa, studies such as that demonstrating the proportion of second trimester abortions are few partly because of legal restrictions (Usta M.B et al "2008").

MATERIALS AND METHODS

This was a cross-sectional non-interventional descriptive survey. The sample for this analysis was based on a non-randomized population of women of Lusaka province between 13-28 weeks of pregnancy requiring abortion care in their second trimester presenting to the University Teaching Hospital CO3 emergency gynecology ward.

It was estimated that 250 women were admitted for second trimester abortion related care over a period of 4 months which period was ideal for the researcher to conduct the study; the appropriate sample size was 145. This sample size was adjusted to include compensation for non-response that is 30% and 10% for those that the researcher is unable to contact (Glenn, 1992: 4).

This study was approved by the University of Zambia Biomedical Ethics Review Board. Each eligible study participant read the consent form in a language they were proficient in. If the potential study participant agreed to participate, the consent form was signed

Data was managed using the statistical package for social sciences (SPSS). Statistical analysis was performed using SPSS version 14 software. Descriptive analyses and bivariate analyses were done. In all cases, $p < 0.05$ was considered significant.

RESULTS

There were 944 women seen in the gynecology outpatient department between March and May 2012 that required abortion care. Of these 875 (92.7%) required post abortion care and 69 (7.3%) had requested for termination of pregnancy. Of the 69 that requested termination of pregnancy 16 (23.1%) were second trimester cases. Similarly, 129 of the 875 (14.7%) that required post abortion care were in the second trimester. These 145 (15.4% of all 944 women that required abortion care in the second trimester were approached to join the study and all accepted.

Socio-demographic characteristics of the participants

Amongst the145 respondents, the oldest was 46 and the youngest 13 years. Majority of the respondents were in the age group 20-24 years (32%), followed by 25-29 years (24%), 30-34 years (16%), 15-19 years (12%), 35-39 years (10%), 45-49years (3%) and 10-14 years (2%). (Table1)

Within this sample, a higher proportion of women (n=108; 74%) came from low income areas whereas middle and high income areas only contributed a lesser proportion (n=37; 27%) (Table1)

In this sample, the women were largely literate. Only 5 (3%) had never been to school and just a handful (n = 11, 8%) had attended tertiary education whereas the majority had either gone up to primary level (n = 54, 37%) and (n =75, 52%) attained secondary education. (Table1)

Most women in this group were unemployed (n=110, 76%) formally employed (n=12, 8%) and informally employed (n= 23, 16%) (Table1)

Most of the women were Christians. Protestants (n =116, 80%) were in the majority compared to Catholics (n = 26, 18%) and Muslims (n = 3, 2%) (Table1).

Table 1: Socio-demographic characteristics of the participants

Variable	Frequency (N)	Percent
Age of Respondents (years)		
10 to 14	3	2
15 to 19	17	12
20 to 24	47	32
25 to 29	35	24
30 to 34	24	16
35 to 39	14	10
45 to 49	5	3
Total	**145**	**100**
Income profile by residential area		
High income area	4	3
Mid Income area	33	23
Low income area	108	74
Total	**145**	**100**
Education status		
Primary	54	37
Secondary	75	52
Tertiary	117	8
None	53	3
Total	**145**	**100**
Religious affiliation		
Muslim	3	2
Catholic	26	18
Protestant	116	80
Total	**145**	**100**
Employment status		
In formal employment	12	8
In informal employment	23	16
Unemployed	110	76
Total	**145**	**100**
Marital Status		
Single	31	21.4
Cohabiting	5	3.4
Married	104	71.7
Separated	4	2.8
Widowed	1	.7
Total	**145**	**100**

Gestation, gravidity and parity of participants

In the study population, the women had a mean of 2 children at the time of the abortion. The mean gestation age in weeks was 16. The minimum was 13 and the maximum was 26 weeks. The minimum and maximum

gravidity states were 1 and 9. The mean state of parity was 2 (SD ± 2) and the minimum and maximum were 0 and 7 (Table 2).

Table 2: Gestation, gravidity and parity characteristics of the participants

Gestation age in weeks	Frequency (N)	(%)
13	15	10.3
14	31	21.4
15	12	8.3
16	29	20.0
17	10	6.9
18	14	9.7
19	3	2.1
20	4	2.8
21	4	2.8
22	7	4.8
23	3	2.1
24	10	6.9
25	1	.7
26	2	1.4
Total	**145**	**100.0**
Gravidity		
1	41	28.3
2	29	20.0
3	27	18.6
4	17	11.7
5	12	8.3
6	13	9.0
7	3	2.1
9	1	0.7
Total	**145**	**100**
Parity		
0	44	30.3
1	35	24.1
2	28	19.3
3	15	10.3
4	10	6.9
5	10	6.9
6	2	1.4
7	1	.7
Total	**145**	**100**

Total abortions and pregnancy desire

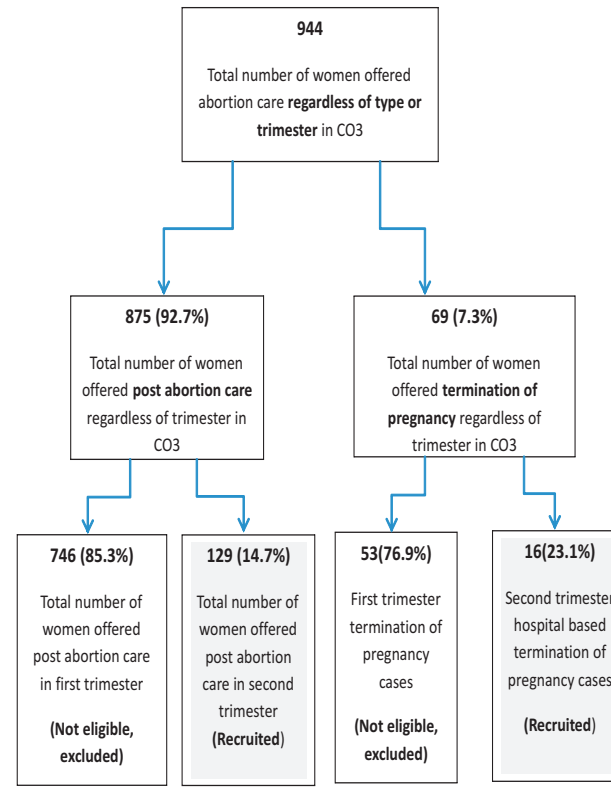
The mean frequency of abortion was 1 the minimum and maximum were 1 and 4 respectively.122 (84%) women had no previous abortion (Table 3)

Table 3: Total abortions and pregnancy desire

	Frequency (n)	Percent
Total abortions		
1	122	84
2	14	10
3	4	3
4	5	3
Total	**145**	**100**
Pregnancy Desire amongst those who terminated pregnancy (N=26)		
Desire to be pregnant	5	19
Wish you were not pregnant	21	81
Total	**26**	**100**

Out of 145 women who were admitted, n = 119 were linked to spontaneous abortions, 16 with medically/surgically induced abortion and 10 with self-induced abortions (Figure 2)

Figure 2. Flow chart showing the recruitment of study participants



Relationships between Independent Variables and Type of Abortion

These abortions seem to increase with age and tend to taper after the age of 24 (Table 4). More women in the 20 to 24 age group reported more cases of abortions but generally the differences across age groups were not significant $p = 0.701$.

The incidence of abortions seem to increase with level of education and there was a significant statistical association between the occurrence of a type of abortion and level of education $p = 0.05$. An examination shows that more cases of abortions that were attended to were among women who had both primary and secondary education since they constituted the largest group of attendees (Table 4).

The incidence of abortions seem to increase with type of religious belief and there was a significant statistical association between the occurrence of a type of abortion and level of affiliation $p = 0.02$. A critical examination shows that more cases of abortions that were attended to were among Christian women who were Protestants (Table 4).

Table 4: Bivariate Relationships between Independent Variables and Type of Abortion

INDEPENDENT VARIABLE	SPONTANEOUS ABORTION	SELF INDUCED ABORTION	MEDICALLY/ SURGICALLY INDUCED ABORTION	WALD F STATISTIC
Residential area				
High income area	1	0	3	P=0.0000
Mid income area	21	3	9	
Low income area	97	7	4	
Total	119	10	16	
Education level				
Primary	50	2	2	P=0.05
Secondary	58	6	11	
Tert iary	6	2	3	
None	5	0	0	
Total	119	10	16	
Age				
10 -14 years	2	0	1	P=0.701
15 -19 years	13	1	3	
20 -24 years	36	5	6	
25 -29 years	31	2	2	
30 -34 years	22	1	1	
35 -39 years	10	1	3	
40 -44 years	0	0	0	
45 -49 years	5	0	0	
Total	119	10	16	
Religious belonging				P=0.02
Protestant	100	5	11	
Catholic	16	5	5	
Muslim	3	0	0	
Total	119	10	16	
Marital status				
Married	95	1	0	P=0.000
Single	17	5	9	
Cohabiting	4	3	6	
Separated	3	1	0	
Widowed	0	0	1	
Total	119	10	16	

Contraceptive use amongst women with second trimester abortion

The 145 women (postabortion care and those seeking termination of pregnancy) were asked about the use of contraception prior to becoming pregnant. Most women n = 128 (88%) were not using some form of contraception to avoid pregnancy. Only a handful n = 17 (12%) actually used some form of contraception prior to index pregnancy.

When the women were asked whether or not they planned the pregnancy and if they had not used contraception to avoid it, it was evident that fewer than expected n = 17 of the women with unplanned pregnancy had used contraception. Of the 128 who did not use any form of contraception, 47 actually had an unplanned pregnancy.

Below is a profile of contraception use among the 26 women who had induced abortion (Table 5 on next page). It is evident that the use rate is low.

Five out of 26 had desired pregnancy signifying a change of personal circumstances where a desired pregnancy later becomes unwanted.

Delay to Seek an Abortion

Table 6 over leaf shows that frequency of occurrence of factors for delay were not predominant (all of them were occurring below the majority value of 50% within the sub population of those who had induced abortions). The most frequent was conflict with partner followed by having tried other methods but failed and not knowing hospitals offered termination of pregnancy services.

An attempt to associate delay for reporting for abortion with known determinants was conducted , it was observed that there was no statistical significant association with any (Table 7).

Cause or predisposing factor of Second Trimester Abortion

Examination of what conditions or situations prevailed leading to abortion shows that 3 out of 119(2.5%) who claimed to have had a spontaneous abortion had used sticks, 17 out of 145 (11.7%) tried drugs. This translates to

only (n=26, 17.9%) women who could be linked to induced abortions. As for the other women, some had co-morbid and co- factor circumstances that could be linked with the type of abortion. The table 8 shows what may have transpired to cause abortion, for some causes were illness n = 72 (49.7%) and other causes known or unknown n = 32 (22.1%) whilst 17 (11.7%) had an injury in the pregnancy.

Table 5: Contraceptive use among those with induced abortion n = 26

Method	Use Rate Among those with induced Abortion	
	Yes	No
mini pill	0	26
combined pill	1	26
IUD (loop or coil)	0	26
Inject able contraceptive	0	26
condom	4	22
rhythm method	4	22
withdrawal method	2	24
Herbs	2	24
LAM	2	24
Other	2	24

Table 6: Determinants of Induced Second Trimester Abortion (N=26)

Determinant of Delay	N	Percent
Conflict with partner	12	48%
Tried other methods of abortion but failed	11	44%
I just did not have information that the hospital could terminate the pregnancy.	9	36%
Some women did not realize that they are pregnant	8	32%
I had this stigma associated with abortion so it delayed me.	8	32%
Feared being arrested/thought it is illegal	8	32%
I just decided not to continue a wanted pregnancy after facing difficult altered pe rsonal circumstances.	8	32%
Turned away from clinic when first went	7	28%
I could not have a pregnancy test to confirm my suspicion that I was pregnant.	6	24%
I delayed in getting a clinic appointment.	6	24%
I do not track my periods so I did not know	6	24%
I did not have money to pay for the termination of pregnancy.	5	20%
Feared the effects of abortion on my health	5	20%
I thought that I could not get pregnant	4	16%
I was uncertain about my monthly period	4	16%
I had irregular period so I could not know	3	12%
I had been spotting or bleeding in this pregnancy	3	12%
I was still denying that I was pregnant	2	8%
The distance was rather long for me to travel.	2	8%
I faced pressure from family members and this delayed my decision to seek medical help.	1	4%

Note – respondents could have had more than one determinant

Table 7: Association between type of abortion and cause for delay

Type of abortion and cause for delay	N	Value	df	Decision
Some women do not realize that they are pregnant	4	37.703[a]	4	No association
I was still denying that I was pregnant	6	50.463[a]	6	No association
I was uncertain about my monthly period	6	39.579[a]	6	No association
I had irregular period so I could not know	8	43.507[a]	8	No association
I do not track my periods so I did not know	6	34.580[a]	6	No association
I thought that I could not get pregnant	8	28.194[a]	8	No association
I had been spotting or bleeding in this pregnancy	6	41.752[a]	6	No association
I faced pressure from family members and this delayed my decision to seek medical help.	6	33.165[a]	6	No association
I just decided not to continue a wanted pregnancy after facing difficult altered personal circumstances.	6	62.140[a]	6	No association
I did not have money to pay for the termination of pregnancy.	8	55.146[a]	8	No association
I just did not have information that the hospital could terminate the pregnancy.	8	67.455[a]	8	No association
The distance was rather long for me to travel.	6	50.463[a]	6	No association
I could not have a pregnancy test to confirm my suspicion that I was pregnant.	8	68.266[a]	8	No association
I delayed in getting a clinic appointment.	6	68.266[a]	6	No association
I had this stigma associated with abortion so it delayed me.	6	62.140[a]	6	No association
Feared being arrested/thought it is illegal	8	86.597[a]	8	No association
Conflict with partner	8	81.840[a]	8	No association
Turned away from clinic when first went	4	61.824[a]	4	No association
Feared the effects of abortion on my health	4	84.597[a]	4	No association
Tried other methods of abortion but failed	6	65.263[a]	6	No association

Quality of care and outcomes of second trimester abortions at UTH

Noting that the quality of care and the outcomes of care are critical in abortion care, abortion procedures were explored, the type of care that was provided and the outcomes observed if at all they were of acceptable quality. Quality of care was measured in the following ways:

1. Patient Information

Based on the Zambian standards and guidelines for reducing morbidity and mortality due to unsafe abortion, the following were found (see also table 9):

Information sharing was poorest concerning (i) what to expect during procedures (ii) return to fertility and (iii) referral to other reproductive health services.

Table 8: Cause or predisposing factor of Second Trimester Abortion

Abortion Factor	Frequency	Percentage
	n	%
Sticks	3	2.1
Drugs	17	11.7
Other methods	4	2.8
I had an illness in this pregnancy	72	49.7
I had an injury in this pregnancy	17	11.7
Other causes known or unknown	32	22.1
Total	**145**	**100.0**

Table 9: Patient information rendered

Domain of patient information	Yes		No	
	N	%	N	%
Information concerning what to expect during procedures	64	44.1	81	55.9
Information on return to fertility	65	45.0	80	55.0
Information on signs and symptoms of complications	109	75.2	36	24.8
Information on post abortion contraception	124	85.5	21	14.5
Information on self-care after procedure	100	69.0	45	31.0
Information when to resume sexual intercourse	92	63.4	53	36.6
Informed of review date.	94	64.8	51	35.2
Referral to other reproductive health services	48	33.1	97	66.9

2. Documentation of important information such as estimated amount of blood lost and blood pressure readings.

In this study, every patient required a profile of bleeding document in their personal file. It was generally observed that abortion care providers did not document the amount of bleeding. The amount of bleeding estimated for the 145 patients is tabulated below, n = 22 (15%) were documented as having bled the expected amount and the same number was observed for those who bled more than was expected. However, n = 101 (70%) had their blood loss undocumented.

An examination of quality care shows that out of the 12 for whom nothing was done when IVF or blood could have been given, 7 had no documentation on extent of blood loss. In addition, the care providers were able to give IVF to 10 patients and one patient received blood transfusion and yet blood loss was not documented (Table10).

Table 10: Intervention for bleeding based on blood loss estimate documented

	Amount of bleeding estimated			Total
Intervention of bleeding	Expected	More than expected	Not documented	
Not necessary	21	1	83	**105**
Did nothing when IVF or blood could have been given	1	4	7	**12**
Gave blood and IV fluids	0	8	0	**8**
Gave IV fluids only	0	9	10	**19**
Blood transfusion alone	0	0	1	**1**
Total	**22**	**22**	**101**	**145**

A similar assessment was done for blood pressure and revealed that slightly more than half n = 85 (59%) had undocumented blood pressure (Table 11). This shows poor care in this domain.

Table 11: Documentation of blood loss and blood pressure

Blood loss documented	Frequency	Percentage
Expected	22	15
More than expected	22	15
Not documented	101	70
Total	**145**	**100**
Blood Pressure		
Normal	13	9
High	4	3
Low	43	29
Undocumented	85	59
Total	**145**	**100**

3. Appropriateness of method of uterine evacuation

When the women were subjected to a regimen to see whether or not it was appropriate for gestation age or post abortion care, n = 16 (11%) had an inappropriate for gestation age or post abortion care (Table 12). However, there was no statistical significant association with method of evacuation especially when it was inappropriate with the observed complications (p= 0.67).

Table 12: Appropriateness of regimen

	Frequency	Percent
Regimen appropriate for gestation of age or post abortion care	129	89.0
Inappropriate for gestation age or post abortion care	16	11.0
Total	**145**	**100.0**

4. Provision of analgesic

Fifty percent of the women in this study were not given analgesics for pain. As for those who received analgesics, n = 31 received other types of analgesics such as morphine, diclofenac and combinations of the different mentioned analgesics, n = 27 got ibuprofen, n = 12 received paracetamol and n = 3 received pethidine.

Generally analgesics were prescribed more inconsistently n = 115 (79.2) times than consistently n = 30(20.8%) times to the women. This shows that there was a quality related problem.

5. Timeliness of response to bleeding.

In this study, time in hours between commencement of bleeding and expulsion of fetus varied from person to person. The maximum time it took was 144 hours and the minimum was just one hour. The mode was 1 hour and the mean time was 7.3 (SD ± 13.9). The mean time was actually affected by the outlier (144 hours). The minimum and maximum time between expulsion of fetus and medical attention was 0 and 20 hours. The mean time was 3.1 hours (SD ± 4.1). In a related matter, the minimum and maximum time between expulsion of fetus and uterine evacuation was 0 and 26 hours. The mean time was 4.3 hours (SD ± 4.5) (Table 4.5.6). These figures seem to suggest that the women under study faced a great risk of having serious complications or even death.

Abortion related complications

Women in this study demonstrated at the time of admission a number of underlying complications. There were more pre-intervention complications among those with spontaneous and self-induced abortions than medically and surgically induced.

The complications listed in table 10 were observed and the most frequent being retained products. This however does not mean that all other complications are not serious indeed one death was observed in this study in a patient who had self-induced abortion with a stick and had a uterine perforation and massive bleeding. Those who had medically/surgically induced abortion also had complications in particular pain, retained products of conception and shock.

DISCUSSION

The number of women seen and offered abortion care in the gynecology outpatient department between March and May 2012 was 944, of these 875 were offered post abortion care whilst 69 had requested for termination of pregnancy.

Of those who requested termination of pregnancy 16(23.1%) were second trimester cases. A total number of 145 were approached to join the study and all were recruited. Out of all the abortion related cases, 15.3% were second trimester cases. These findings are comparable to South Africa with 20% of abortion cases being second trimester and Vietnam 8-11% (Gallo 2007)

Women in the 20 to 24 age group reported most cases of abortions but generally the differences across age groups were not significant $p = 0.701$. The incidence of abortions seemed to increase with level of education $p = 0.05$ and further, the incidence of abortions seem to increase with type of religious belief $p = 0.02$.

Most women n = 128 (88%) were not using some form of contraception to avoid pregnancy and 47 (36.7%) had an unplanned pregnancy whilst n = 17 of the women with unplanned pregnancy had used contraception. This

signifies a contraception need among those with unplanned pregnancy and further that they may be prone to risk of induced abortion. It was surprising to see that among those who induced abortion 5 out of 26(19.2%) had desired pregnancy and this signifies a change of personal circumstances where a desired pregnancy later becomes unwanted.

Noting that delay is a critical factor in inducing abortions, personal and health system factors were assessed to see if at all they were any associations. Of the delay factors, the most frequent was conflict with partner followed by having tried other methods but failed and not knowing hospitals offered termination of pregnancy services.

When an association test was performed, it was evident that no determinant had a significant association ($p > 0.05$) A critical examination of what conditions or situations were prevailing to be linked with abortion showed that 3 out of 119(2.5%) who claimed to have had a spontaneous abortion had actually used sticks, 7(26.9%) of 26 who had induced abortion tried drugs like cafenol, aspirin and misoprostol. This translates to only 10 of the 145 (6.8%) women who could be linked to self- induced abortions. As for the other women, some had co -morbid and co- factor circumstances that could be linked with the type of abortion. In other women who had spontaneous abortion, causes were illness n = 72 (49.7%) and other causes known or unknown n = 32 (22.1%) whilst 17 (11.7%) had an injury in the pregnancy (e.g. beaten or a fall).

Quality of care was observed to be generally poor in all the critical areas that were examined. Information sharing was poorest concerning (i) what to expect during procedures (ii) return to fertility and (iii) referral to other reproductive health services.

In this study, it was generally observed that abortion care providers did not document the amount of bleeding and this was a serious quality omission. A similar assessment was done for blood pressure and a critical examination shows that slightly more than half n = 85 (58.6%) had undocumented blood pressure and this shows poor care in this domain.

When the regimen or method used on women for uterine evacuation was assessed to see whether or not it was appropriate for gestation age or post-abortion care, it was observed that n = 129 (89%) were subjected to a regimen that was appropriate for gestation of age or post abortion care and n = 16 (11%) had an inappropriate for gestation age or post abortion care. However, there was no statistically significant association between method of evacuation and observed complications (P= 0.67).Some of the methods that were inappropriate included use of Foley's catheter combined with misoprostol or oxytocin infusion for induced abortion or oxytocin infusion for those who had not expelled foetuses at gestations when an immediate manual vacuum aspiration could have been done thus prolonging patients hospital stay and bleeding time.

Fifty percent of the women in this study were not given analgesics for pain. As for those who received analgesics, n = 31(21.4%) received other types of analgesics, n = 27(18.6%) got ibuprofen, n = 12(8.3%) received paracetamoland n = 3(2.1%) received pethidine. Generally, analgesics were prescribed inconsistently. This shows that there was a quality related problem with regard to the fact that if analgesia is given it must be given consistently but in public health facilities this may be a challenge as there are often drug stock outs. In addition, an association test was conducted to see whether dosing schedules were not consistent with maximum accepted delay of an hour. There was no statistical significant association that doses were prescribed as scheduled ($p = 0.084$).

Time in hours between commencement of bleeding and expulsion of fetus varied from person to person. The maximum time it took was 144 hours and the minimum was just one hour. The mode was 1 hour and the mean time was 7.3 (SD ± 13.9). The mean time was actually affected by the outlier (144 hours). The minimum and maximum time between expulsion of fetus and medical attention was 0 and 20 hours. The mean time was 3.1 hours (SD ± 4.1). The minimum and maximum time between expulsion of fetus and uterine evacuation was 0 and 26 hours. The mean time was 4.3 hours (SD ± 4.5). These figures seem to suggest that the women under study faced a great risk of having serious complications or even death.

Various complications were noted in this group .The worst was one death following uterine perforation in an

attempted induced abortion. The patient was very ill with a poor prognosis and died on the operating table. Other complications in order of frequency retained products of conception, shock, severe pain, infection, perforations, need for operative intervention and hemorrhage. Hemorrhage was noted in only one patient and yet clearly there was more of this complication judging from the 29% who were hypotensive and those who needed blood or fluids as part of their treatment. This can be explained by the poor documentation noted in the file review. The comments were merely on the amount of products of conception and not an estimate of blood loss.

It was interesting to note that a couple of patients who had medically/surgically induced abortion experienced shock as a complication. These were patients in whom the method of evacuation was appropriate for gestation age. This could however be explained by delay in uterine evacuation after expulsion. Perhaps also methods such as dilatation and evacuation that are not used at UTH should be explored.

Some patients had more than one complication and 68(46.9%), 47(32%) had two and 22(15.2%) had three.

Study Limitations and Strengths

Due to cross-sectional design, the associations reported are not directly causal. As UTH was the only site for which the entire participant group was screened, the findings cannot be generalised. Most importantly, it is possible that this study was subject to misclassification of the outcome, as pregnancy outcome was self-reported. It has been shown that, in societies where induced abortion is stigmatized, women report induced abortions as spontaneous abortions (Lema at al., 1996; WHO, 2007). Even when women are examined clinically and medical charts are reviewed; it is sometimes difficult, in the absence of perforation of the uterus or the identification of foreign objects in the uterus, to accurately identify the type of abortion (Kaye et al, 2006).

Throughout Zambia, programs and policies must first focus on the provision and uptake of modern contraception to avoid unintended pregnancy. In addition, for women who have unintended pregnancies, substantial effort needs to be made to ensure safe and effective termination methods are available for women who choose this option in a setting where it is legal.

CONCLUSIONS

The determinants of the second trimester abortion cases at the University Teaching Hospital are contributed by social, economic, health system factors, trauma, illness and unknown factors. The outcomes are varied due to patient factors and methods used for uterine evacuation of which not all were standard. Outcomes included uncomplicated complete abortion, retained products of conception, haemorrhage, uterine perforation, pain, shock, infection, lacerations, delayed vaginal bleeding and death. The methods of uterine evacuation were varied and not all standard but the overall outcome of the patient was not significantly affected by this finding.

RECOMMENDATIONS

Information must be given to young male and female adolescents about their sexuality so that they can carry out safe sex practices.

Education about the signs and symptoms of pregnancy. This would entail promoting a greater awareness of symptoms including the fact that some women do experience continuing bleeding while pregnant.

Promoting the understanding that seeking help from an abortion service does not imply a definite decision to have an abortion could help to speed up the process between finally asking for an abortion and obtaining one.

Further than this, given the findings, opportunity for information dissemination should be seized at first presentation in the hospital.

There must be regular audits of abortion care services.

There is need to ensure documentation in the patient records is standardized.

All health workers must be sensitized on the legal status of abortion and more must be trained to be service providers so that the number resorting to unsafe abortion is brought to minimum.

Methods of uterine evacuation must be standardized and methods such as dilatation and evacuation introduced to shorten hospital stay of patients.

REFERENCES

1. Adanu RMK, Ntumy MN, Tweneboah E. Profile of women with abortion complications in Ghana.Trop Doct 2005;35:139–42.
2. Bankole A, Sedgh G, Oye-Adeniran BA, Adewolfe IF, Hussain R, Singh S. Abortion-seeking behavior among Nigerian women. J BiosocSci 2008;.40:247–68.
3. Bankole A, Singh S, Hass T. Characteristics of women who obtain induced abortion: a worldwide review. IntFam Plan Perspect.1999; 25:68–77.
4. Berer M. Making abortions safe: a matter of good public health policy and practice. Bull World Health Org.2000; 78:580–92.
5. Bleek W, Asante-Darko NK. Illegal abortion in Southern Ghana: methods, motives and consequences. Hum Organ.1986; 45:333–44.
6. Finer LB, Frohwirth LF, Dauphinee LA etal.Timing of steps and reasons for delays in obtaining abortions in the United States. Contraception 2006; 74: 334–344.
7. Henshaw SK, Adewole I, Singh S, Bankole A, Oye-Adeniran B, Hussain R. Severity and cost of unsafe abortion complications treated in Nigerian hospitals. IntFam Plan Perspect 2008; .34:40–50.
8. Henshaw SK, Singh S, Haas T.The incidence of abortion worldwide.IntFamPlannPerspect 1999;25 (Suppl):S30–8.
9. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM.Domestic violence as a risk factor for unwanted pregnancy and induced abortion in Mulago Hospital, Kampala, Uganda. Trop Med Int Health 2006; .11:90–101.
10. Koster-Oyekan W. Why resort to illegal abortion in Zambia? Findings of a community-based study in Western Province.SocSci Med 1998; 46:1303–12.
11. Lema VM, Rogo KO, Kamau RK.Induced abortion in Kenya: its determinants and associated factors.East Afr Med J 1996; 73:164–8.
12. Mosoko JJ, Delvaux T, Glynn JR, Zekeng L, MaCauley I, Buve A. Induced abortion among women attending antenatal clinics in Younde, Cameroon. East Afr Med J 2004;81:71–7.
13. Nyanzi S, Nyanzi B, Bessie K. Abortion? That's for Women! Narratives and experiences of commercial motorbike riders in South-Western Uganda.Afr J Reprod Health 2005; 9:142–610.
14. Oye-Adeniran BA, Adewole IF, Umoh AV, Fapohunda OR, Iwere N. Characteristics of abortion care seekers in South-Western Nigeria. Afr J Reprod Health 2005; 8:81–91.
15. ShainRN A cross-cultural history of abortion. ClinObstetGynaecol 1986; Mar; 13(1):1-17.
16. Usta M, Mitchel E, Brookman-AmissahE,Gebreselassie H, KwizeraA.Who is Excluded When Abortion Access is Restricted to Twelve Weeks? Evidence from Maputo, Mozambique. Reproductive Health Matters 2008;.16:14-17
17. WHO Abortion: a tabulation of available data on the frequency and mortality of unsafe abortion. World Health Organization 1994.
18. WHO Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008,6th edition. Geneva, Switzerland: World Health Organization.
19. WHO Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003, 5th edition. Geneva, Switzerland: World Health Organization 2007.
20. WHO Medical Methods for Termination of Pregnancy. WHO Technical Report Series 871. World Health Organization, Geneva 1997.