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Research Article

Rate of Different Types of Abortion in Madinah Maternity and Children Hospital, Madinah, Saudi Arabia

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Abstract

Abortion is the loss of the fetus before it is viable. It is one of the commonest complications of pregnancy, occurring in 12% - 26% of pregnancies. Causes of abortion include chromosomal problems, infection, maternal chronic diseases, (for example diabetes), hormone problems, immune system responses, body mass index (BMI) issues of the mother, and uterine abnormalities. Abortion can be diagnosed and confirmed by pelvic examination and ultrasound. It is six types and this is a retrospective study, which was carried out in Madinah Maternity and Children Hospital (MMCH), Madinah, Saudi Arabia, to find out the rate of different types of abortion in Madinah Maternity and Children Hospital (MMCH) in the year 2016.

Results showed that abortion represents 95% of early bleeding patients of MMCH. The commonest type of abortion in MMCH was incomplete abortion. The reason most probably is the advanced age and grand multiparity, with the other mentioned above causes.

More detailed will organized prospective trials are needed to confirm the main causes.

Keywords: *Abortion; Miscarriage; Biochemical Loss; Incomplete Abortion; Grand Multiparity*

Introduction

Abortion, miscarriage or loss of the fetus before it is viable, is the most common complication of pregnancy, occurring in 12% - 26% of recognized pregnancies [1,2]. These terms are applied to many complications in pregnancy and should be clear on definition. The term "biochemical loss" is applied to abortion after a positive urinary human chorionic gonadotropin (HCG) or a raised serum β-hCG but before ultrasound or histological verification, in other words, abortion before 6 weeks of pregnancy. The term clinical miscarriage refers to pregnancy loss after ultrasound examination or histological evidence has confirmed that an intrauterine pregnancy has existed. Clinical miscarriage (abortion) can be divided into early (before 12 gestational weeks) and late (between 12 to 20 gestational weeks) [3-5].

Abortion is a common and distressing complication of pregnancy. Recently, progress in immunology and genetics gave us a greater understanding of implantation and maternal-embryo interactions. These gave us a new look into the possible causes of abortion, and opened up new methods for research [2,6,7].

Early pregnancy loss is a physiological phenomenon prevents conception of chromosomally or structurally malformed infants (50%) [1,3]. This is supported by studies, assessed fetal morphology prior to evacuation. In these studies, fetal malformations represented 85% of cases, while three quarters of fetuses had abnormal karyotype. On the other hand, the importance of the immune system in abortion, is evident in genetic studies, showing that genetic biomarkers are important for immunologic dys-regulation in pregnancy [1,2,8]. It is well known, that thyroid dysfunction and thyroid autoimmunity are associated with abortion. For example, patients who are euthyroid with

thyroid antibodies or in thyroid antibody negative patients with high level of thyroid stimulating hormone (TSH). Added to that, it is well known that, hypothyroidism is highest among fertile women [2,6,7]. In addition, the age of both parents has a significant role as the risk of an adverse pregnancy outcome is increased if the parents are 35 years old or older and it is 50% higher if the mother is 42 years of age. On top of that, acquired or congenital uterine malformations are a well-known cause of recurrent pregnancy loss. In addition, factors such as ethnic origin, psychological state of the mother, feelings of stress, use of non-steroidal anti-inflammatory drugs, have also been associated with significantly higher rates of miscarriage [5,9]. In the other hand, life style factors may cause or increase incidence of abortion. These factors include alcohol consumption, smoking, very low body mass index (BMI) and obesity. Finally, a number of infections have been linked to miscarriage. Specifically, 15% of early miscarriages and 66% of late miscarriages have been attributed to infections [1,5,7,9].

If a woman is having abortion, she will probably have vaginal bleeding, abdominal pain, and cramping. Bleeding may be only slight spotting, or it can be quite severe. Pain and cramping occur in the lower abdomen. They may occur on only one side, both sides, or in the middle. The pain can also go into the lower back, buttocks, and genitals. The woman may no longer have signs of pregnancy such as nausea or breast swelling/tenderness if she has experienced an abortion [1,4,10].

Abortion can be divided into medical and surgical. Medical abortion brought about by medication taken to induce it, either as single pill or a series of pills. Medical abortion, depending on the stage of gestation and the medical products used, has a success rate of 75 - 95%, with about 2 - 4% of failed abortions requiring surgical abortion, On the other hand surgical abortion, means using a surgical technique to operatively remove the content of the uterus and all its parts [2,5].

Medically, abortion can be divided into 7 types. First type is threatened abortion, where clinical symptoms of abortion occurred, but pregnancy products remained in uterus. This commonly happens in early pregnancy, were symptoms including, vaginal bleeding (bright red to brown) for a few days or weeks. Abdominal pain may happen. On examination: cervix closed, the amniotic sac has not broken, the size of the uterus consistent with the time of pregnancy [1,3]. The second type is inevitable abortion, this refers to pregnancy that cannot be sustained. Vaginal bleeding is more and may last for longer time, blood clots, and lower abdominal pain intermittently, or amniotic fluid outflow. On examination: cervix opened, amniotic sac prominent or may be broken, and embryonic tissue may be felt in the cervical canal, or out of the cervix [2,5]. Next type is the fetus and part of placenta discharge, and part or the entire placenta is retained in the uterine cavity, which is called the incomplete abortion. If abortion occurred before 8 weeks of pregnancy, sometimes, fetus and placenta can be discharged simultaneously. While, 8 to 12 weeks of pregnancy, the product is not easy to discharge completely. Because of this residual tissue within the uterine cavity, uterus cannot contract well, resulting in vaginal bleeding for long time with the possibility of intrauterine infection [1-3]. On examination: cervix open, and sometimes the embryonic tissue felt in the cervix. The uterus is less than the number of normal pregnancy days. The fourth type is complete abortion, were fetal and placental tissue completely discharged with vaginal bleeding and abdominal pain stopping. It often occurred before 8 weeks of gestation [3,4,6]. On examination: the cervix is closed and the uterus is almost normal size. The fifth type is missed abortion, were fetal death occurred and remains in the uterus. The exact cause is not clear, may be related to the levels of estrogen and progesterone and the sensitivity of uterus. On the other hand, excessive treatment to threatened abortion may be another reason. Next is the sixth type, which is recurrent abortion. This consist of three consecutive or more abortions [5]. The incidence is 1 - 5% of all pregnancies, but accounts for 15% of all abortions. Lastly, infected abortion which is abortion combined with the infection of reproductive system. Various types of abortion may be complicated by infection, especially incomplete abortion, missed abortion and illegal abortion [7,8].

Aim of this Study

The aim of this study is to find out the rate of different types of abortion in Madinah Maternity and Children Hospital (MMCH) in the year 2016.

Methods

This is a retrospective study, which was carried out in Madinah Maternity and Children Hospital (MMCH), Madinah, Saudi Arabia. Abortion patient records was identified and data was extracted from patient's records in the hospital from 1 January 2016 to end of De-

cember 2016. Due to the retrospective nature of the study, informed consent was not necessary but patient records were de-identified prior to analysis. Study was conducted between 1 and 18 of May 2017.

Madinah MCH (MMCH) is a tertiary hospital where medical care is given free of charge. MCH cover the whole region of Madinah which is 151,990 km^2 (58,680 mi^2), with a total multi ethnic population of 1,977,933. MCH lies in Madinah, which is the capital of the region and the second holiest city in Islam [11]. MCH average number of deliveries is 15,000 per year, and caesarian section rate is 21%. Abortion was defined as loss of pregnancy before 20 weeks of pregnancy. Diagnosis of abortion type and method of treatment was taken from patient's records.

A form was designed to extract data from patient's records. Outcomes include demographic characteristics of the participants (nationality, age, parity, gestational age at time of diagnosis, and history of previous abortions), method of management, and hospital course. Simple descriptive analysis used.

Results

During the period of the study, there was 1984 patient admitted as bleeding in early pregnancy (Table 1).

Patients admitted as bleeding in early pregnancy N (%)	Confirmed patients of different types of abortion N (%)	Confirmed patients of molar pregnancy N (%)	Confirmed patients of ectopic pregnancy N (%)
1744 (100%)	1658 (95.07%)	20 (1.15%)	66 (3.78%)

Table 1: *Patient admitted as bleeding in early pregnancy in 2016.*

There was 1640 patients admitted as abortion. 18 patients were added to them because they had therapeutic abortion for sever cardiac diseases. Demographic characteristics of patients can be seen in (Table 2). Almost half the patients were between 38 - 45 years old, of University education and grand multipara.

Parameters		Abortion patients N (%)
Age	18 - 28 Y's	346 (20.9%)
	28 <- 38 Y's	497 (30%)
	38 <- 45 Y's	815 (49.1%)
Nationality	Saudi	1462 (88.2%)
	Non-Saudi	196 (11.8%)
Education	High school	153 (9.2%)
	University	948 (57.2%)
	Higher education	557 (43.6%)
Parity	PG	387 (23.3%)
	P1 - P4	566 (34.1%)
	P5 ≤	705 (43.6%)
History of previous abortions	Yes	231 (13.9%)
	No	1427 (86.1%)

Table 2: *Demographic characteristics.*

Analyses was done for each patient file to study the types of abortion, management done and hospital course (Table 3). Fifty-one women had medical management but required further management by surgical evacuation.

Parameters		Abortion patients N (%)
Types	Threatened abortion	392 (23.6%)
	Inevitable abortion	10 (0.6%)
	Incomplete abortion	582 (35.1%)
	Complete abortion	49 (3.0%)
	Missed abortion	567 (34.2%)
	Recurrent abortion	39 (2.4%)
	Infected abortion	1 (0.1%)
	Medical abortion	18 (1.1)
Management	Medical	353 (21.3%)
	Mechanical (Balloon)	47 (2.8%)
	Surgical	1258 (75.9%)
Hospital course	Further intervention	51 (3.1%)
	Good	1607 (96.9%)

Table 3: *Causes, management and complications.*

Among those abortion patients, 193 patients (11.6%) are newly pregnant after that abortion episode and are booked in MMCH. In addition, five patients (0.3%) of the study patients, admitted as incomplete abortion and were managed and discharged in good condition.

Discussion

During 2016 there was 15096 deliveries, 10234 vaginal deliveries and 4790 LSCS deliveries. There was 1862 patients came to emergency room and clinic complaining of vaginal bleeding. Among them 1744, patients were diagnosed as bleeding in early pregnancy.

Abortion is the loss of a fetus before the 20th week of pregnancy. As many as half the pregnancies end in abortion, most often before a woman misses a menstrual period or even knows that she is pregnant. About 15 - 25% of recognized pregnancies end in abortion, and 80% of abortions occur within the first three months of pregnancy [2,5].

Most abortions happen when the fetus has genetic problems. Usually, these problems are unrelated to the mother. Other causes of abortion include, infection, medical conditions of the mother, such as diabetes or thyroid disease, hormone problems, immune system responses, BMI problems in the mother, and uterine abnormalities. A woman has a higher risk of miscarriage if she is over age 35 years, has certain diseases, such as diabetes or thyroid problems or had three or more miscarriages. Abortion may be due to weakness of the cervix, incompetent cervix, which cannot hold the pregnancy usually in the second trimester [1,12].

Abortion can be diagnosed and confirmed by pelvic examination and ultrasound. Blood tests, genetic tests, or medication may be necessary if a woman has recurrent abortion. Some diagnostic procedures used pelvic ultrasound, hysterosalpingogram, and hysteroscopy [7].

At least 85% of women with abortion will have subsequent normal pregnancies and births, while, 1% - 2% of women may have repeated abortion. Some health care providers recommend waiting (from one menstrual cycle to 3 months) before trying to conceive again. To heal both physically and emotionally. Usually abortion cannot be prevented but If a specific problem is identified, then treatment options may be available [2,7].

In this study, more than have the patients were above 38 years old which confirm with all previous studies. Added to that, the commonest type of abortion in MMCH are incomplete abortion, followed by missed abortion and this can be because MMCH is a tertiary referral hospital. The third commonest type is threatened abortion.

Conclusion

Abortion represents 95% of early bleeding patients of MMCH. Incomplete abortion is the commonest type of abortion in MMCH. The reason most probably is the advanced age and grand multiparity, with the other mentioned above causes.

More detailed will organized prospective trials are needed to confirm the main causes.

Conflict of Interest

Non-Known.

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