

## CLINICAL FEATURES AND RISK FACTORS OF ABORTION IN PORT-SAID CITY

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### ABSTRACT

**Background:** Abortion is a public health concern because of its impact on maternal morbidity and mortality. **Aim** of this study was to explore the clinical features of abortion and to identify the risk factors associated with abortion in Port Said City. **Setting:** It was carried out at the Obstetrics and Gynecology Department in Port Said and Port Fouad General Hospitals. **Subjects:** 400 women were included in the study, 200 were diagnosed as having abortion and 200 women had normal delivery. **Data** were collected using an interviewing schedule with questions about demographics and specific items regarding abortion history. Information included age, literacy, gravidity, abortion, type of abortion, family history of abortion, women life style, and the profile of patients who underwent abortion. **The results** of this study showed that abortion was more common among younger women (38.5%) and older age group (5.5%) as well as women exposed to hard physical work (31.3%) , long exposure to computer (61.5%) and electromagnetic waves (19,5%). Missed abortion (37,0%) and induced abortion (18,0%) were the most common types . It was concluded that aborted women were more common of the younger age group. Complete, missed and induced abortions were the most common types. The study recommended that the maternity nurse should be alert for early detection and identification of risk factors for abortion. Unwanted pregnancies must always be given the highest priority, and all attempts should be made to eliminate the need for abortion

## INTRODUCTION

The word **abortion** derives from the Latin *aboriri*—to miscarry. According to the New Shorter Oxford Dictionary (2002), abortion is premature birth before a live birth is possible, and in this sense it is synonymous with miscarriage. It also means an induced pregnancy termination to destroy the fetus. Although both terms are used interchangeably in a medical context, popular use of the word *abortion* by lay persons implies a deliberate pregnancy termination (William, 2012). Spontaneous abortion occurs in an estimated 5-15% of pregnancies. Globally, abortion mortality accounts for at least 13.0% of all maternal mortality. New estimates are that 50 million induced abortions are performed each year in developing countries, with approximately 20 million of these performed unsafely because they are performed by persons without the proper skills or outside of a medically safe environment (Trupin, 2011). More than 80 percent of spontaneous abortions are in the first 12 weeks and at least half result from chromosomal anomalies. It also appears to be a 1.5 male: female gender ratio in early abortuses (Benirschke and Kaufmann, 2000).

The risk for abortion is higher in women with a history of three or more previous abortions, couples with recurrent abortions have a 2-3% incidence of parental chromosomal anomaly (i.e. balanced translocation), also maternal causes of abortion include structural abnormalities of the reproductive tract such as; congenital uterine defects (i.e. uterine septum), fibroids and cervical incompetence (Owen et al., 2003). Other causes of abortion include; maternal physical and psychological (stress factors) problems, hormonal factors and immune responses. One study suggests that the plasma of women with abortion contained significantly higher circulating levels of inflammatory markers as tumor necrosis factor alpha (TNF- $\alpha$ ), interferon gamma (IFN- $\gamma$ ), interleukin (IL)-6 and IL-10 than that of pregnant controls, irrespective of gestational age (Calleja-Agius et al., 2012).

### AIM OF STUDY:

The aim of this study was to explore the clinical features of abortion and to identify the risk factors associated with abortion in Port Said City.

### SUBJECTS AND METHODS:

#### Research design:

This study is an observation case-control study

**Settings of the study:**

This study was conducted in the Obstetrics and Gynecology Department in Port Said and Port Fouad General Hospitals.

**Study population.**

The target populations included two groups:

**Group I or study group (aborted women):**

Two hundred women with a diagnosis of abortion were selected purposefully from the patients admitted to the Obstetrics and Gynecology Department, Port Said and Port Fouad General Hospitals.

**Group II or control group (non-aborted women):**

Two hundred parturient women were chosen by simple random selection from those admitted to labor unit at the Obstetrics and Gynecology Department, Port Said and Port Fouad General Hospitals

**Sample:**

The sample size was calculated according to the following equation:

$$n = \frac{k \times 2\sigma^2}{(MD)^2}$$

Where  $\sigma^2$  is the error variance,  $MD$  is the minimum difference between groups and  $k$  at the significance level 95% ( $\alpha = 0.05$ ) and power 80% ( $\beta = 0.2$ ) = 7.8.

Power calculations suggested that a minimum of 200 patients per group would detect a 20% difference between the groups ( $\alpha = 0.05$ ,  $\beta = 0.2$ )

$n = 200$  women per group.

So, according to the calculations the sample size was 200 pregnant women within group I (aborted patients) and 200 pregnant women within group II (non-aborted patients)

**Technique of sample selection:****Tool for data collection**

An interview questionnaire form was used to collect relevant data about the study from patients and controls .

**Interview questionnaire:**

It included the following variables:

- Personal and demographic data: maternal age, residence, level of education, social class, history of consanguinity between mother and father.
- Special habits: maternal or paternal smoking habits and caffeine
- Occupational history: working hours, rate of work, heavy work, rest hours, occupational hazards (e.g. pesticides, x-rays or other radiations, dust, chemicals or biological exposure).
- Obstetric history: gravidity, parity, abortion.
- Menstrual history: rhythm, regularity, duration, last menstrual period (LMP).
- Gynecological history: history of vaginal bleeding, abdominal pain, and passage of tissue with its onset, course, duration, amount, severity and associated symptoms.
- History of chronic disease: heart disease, hypertension, diabetes mellitus, chronic kidney or hepatic diseases, autoimmune diseases and thyroid disorders.
- History of maternal congenital uterine defects (particularly uterine septum), fibroids or cervical incompetence.
- History of maternal infection (e.g. *rubella* virus, *cytomegalovirus*, *Listeria infection* or *toxoplasmosis*).
- Family planning history

**Physical assessment sheet :**

Both general and local physical examinations were done for the patients and controls. Also, pelvic-abdominal ultra-sonography examination was done for aborted group to estimate the gestational age. The clinical diagnosis of abortion, causes, investigations required and treatment were all recorded by the researcher. Estimating the patient's hemodynamic stability and danger signal observed on patient's admission were recorded and reported by the researcher.

**Prognostic outcome measures:**

- Admission to intensive care unit (ICU).
- Amount of blood loss.
- Amount of blood transfusion.
- Performance of D&C.
- Complications (fever, hypovolemic shock, DIC, maternal infection and cesarean hysterectomy).
- Duration of hospital stay and time of discharge from hospital.

**Ethical Considerations:**

The purpose of the study and procedures to be performed were explained to the patients and controls, and oral consent to participate in the study was taken accordingly. All patients were managed properly after abortion. Post abortive hygiene and counseling about problems encountered and methods used to cope with these problems were discussed with every woman.

**RESULTS:**

**Table(1):** Concerning the causes of induced abortion and method used , genetic problem of fetus was the most common causes of induced abortion by the study group (38.5%) followed by unwanted pregnancy (33.2%). Meanwhile, vacuum aspiration was the most common method used for induced abortion (33.2%) .

**Table (2):** It describes the clinical characteristics of current abortion. More than two thirds (74.0%) of women in the aborted group were conscious. Meanwhile, in almost two thirds (68.5%) bleeding amount was moderate and severe in ( 26.0%) of cases.

**Figure (1):** Gestational age and type of abortion are presented. More than half of group was >20 week gestational age (50.5%) and missed abortion was more common between types (37.0%), tumor was highest cause of abortion (33.0%).

**Table (1):** Distribution of the Aborted Group According to Causes of Induced Abortion and Method Used (n=200) .

	No.	%
<b>Causes of induced abortion (n = 36)</b>		
Unwanted pregnancy	12	33.2
Genetic problem of fetus	14	38.5
Physical or psychological factor	9	25
Others	1	2.4
<b>Method used for induced abortion(n=36)</b>		
D&c	5	13.5
Methotrexate	3	8.2
Vacuum aspiration	12	33.2
Dilation & evacuation	8	22.1
Vaginal prostaglandin	8	22.1
Intraamniotic instillation.	0	0

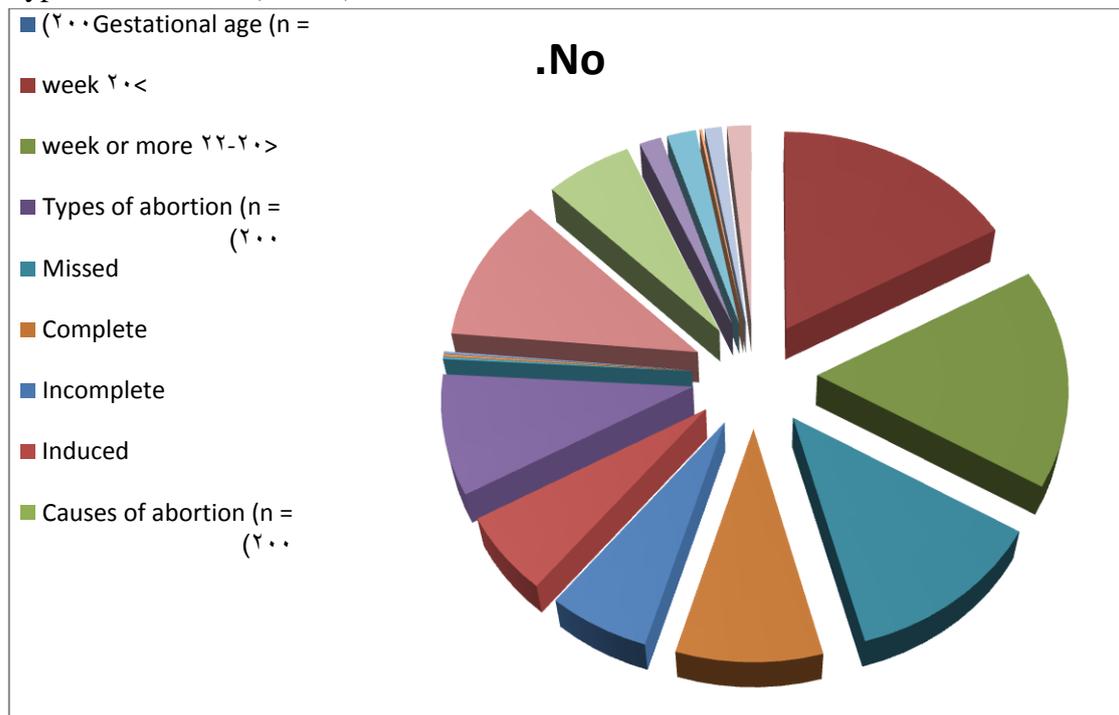
**Table 2:** Distribution of the Studied Women According to Clinical Characteristics of Current Abortion (n=200).

<b>Clinical Characteristics of Current Abortion</b>	<b>No</b>	<b>%</b>
<b>Level of consciousness (n = 200)</b>		
Consciousness	148	74.0
Semiconscious	49	24.5
Unconscious	3	1.5
<b>Bleeding amount (n = 200)</b>		
Mild	23	11.5
Moderate	137	68.5
Severe	40	20.0
<b>Bleeding days (n = 200)</b>		
>5 days	73	36.5
<5-10 days or more	127	63.5
<b>Severity of bleeding (n = 200)</b>		
Severe	52	26.0
Moderate	116	58.0
Mild	32	16.0
<b>Uterine size (n = 200)</b>		
Normal	126	63.0
Abnormal	74	37.0
<b>Cervical OS (n = 200)</b>		
Closed	164	82.0
Opened	36	18.0

Distribution of the Aborted Group According to Gestational Age and

**FIGURE 1:**

Types of Abortion (n=200) .



**DISCUSSION:**

The results indicate that abortion was significantly more common among the younger (<25 years) women and older age group (35+) compared to women with normal pregnancy. This corresponds well with the findings of *Mohammad et al., (2011)*, study on in Al-AZhar University Hospital, Egypt, who reported that the risk of miscarriage was higher if the woman was aged  $\geq 35$  years. Similarly, *Nybo Andersen et al., (2000)* studied the effect of maternal age on fetal loss and they found that fetal losses are increased after 35 years of age. More than one fifth of all pregnancies in 35-year-old women resulted in fetal loss. Similarly, *El-Shamandy (2007)* in Assiut reported in his study about "a Study of post abortive complications among aborted women in EL- Minia city Hospitals" that, almost two thirds of aborted women were illiterate, and almost three quarters had low socioeconomic level.

Conversely, *Pallikadavath and Stones (2006)* studied the maternal and social factors associated with abortion in India in a population-based study. They found that the strongest predictor of abortion was maternal education. Women with at least a primary education were more likely than those with no education to have had an abortion (odds ratio=2.2). In agreement with the above study finding, *Elias Senbeto, (2005)* has shown the undeniable fact that the problem of abortion in general and induced

abortion in particular is very high among the urban and rural women of their study areas.

Each year, approximately 20 million unsafe abortions are performed worldwide. They result in nearly 80,000 maternal deaths and hundreds of thousands of disabilities. In some countries, unsafe abortion is the most common cause of maternal death. It is also one of the most easily preventable and treatable condition. In many developing countries, giving attention and solving the problem of abortion is a low priority for the health service managers. Unsafe abortion is not only a medical problem but also a social problem. Different sectors should be involved in solving this problem (WHO,1995).

The stage of gestation when a woman presents for abortion is important since it determines the type of procedure that should be used and the risk of morbidity and mortality. The present finding is in accordance with that of (Kleinhaus *et al*,2006) who reported that most miscarriages occur so early in the pregnancy that the woman is not even aware that she was pregnant. More than 80 percent of abortions occur within the first 12 weeks of gestation.

Abortion becomes much less common by the end of the first trimester, and its incidence decreases successively thereafter. Overall, spontaneous loss in the second trimester is estimated at 1.5 to 3 percent, and after 16 weeks, it is only 1 percent (Simpson *et al.*, 2007). Several studies describe that women have symptoms of depression after miscarriage; the same finding is reported in the present study. (Moulder, (1994) found that the majority of women have an intensive period of grieving, guilt, and anxiety after miscarriage. Women feel responsible for their miscarriages and have feelings of guilt, more than two thirds of women have guilt reactions. Miscarriage represents the loss of a pregnancy, of a baby or future child, of motherhood, of self-esteem and it may also engender doubts regarding ability to reproduce (Friedman, 1989; Lee & Slade, 1996; Moulder, 1999). Feelings of emptiness, shame, helplessness and low self-esteem are commonly expressed after miscarriage (Frost & Condon, 1996).

## **CONCLUSION:**

**Based on the findings of the present study it can be concluded that :**

Many risk factors are associated with abortion. Some of these are related to socio-demographic, work, environmental, and life style factors of pregnant mother. The most important of these are age, educational level, and physical exposure at work,

drinking coffee, tea, and nutrition during pregnancy. Other factors are related to menstrual, obstetric, and family and past history.

### **RECOMMENDATIONS:**

Based on the most important findings of the study, the following recommendations are suggested: Prevention of unwanted pregnancies must always be given the highest priority and all attempts should be made to eliminate the need for abortion.

Risk factors of abortion play an important role, thus the maternity nurse should be alert for early detection and identification of these factors in order to reduce maternal and fetal death or complications. Initiation of strict control of these risks should be reinforced prior to conception, and such control should be maintained throughout pregnancy to reduce the incidence of complications.

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## المظاهر الإكلينيكية وعوامل الخطورة في الإجهاض بمدينة بورسعيد

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### الخلاصة

الإجهاض هو مصدر قلق للصحة العامة بسبب تأثيرها على مرآضة الأمهات والوفيات. و الهدف من هذه الدراسة هو استكشاف المظاهر الإكلينيكية للإجهاض وتحديد عوامل الخطر المرتبطة بالإجهاض في مدينة بورسعيد تم تنفيذه في قسم أمراض النساء والتوليد في بورسعيد وبور فؤاد بالمستشفيات العامة، أدرجت 400 امرأة في الدراسة، تم تشخيص 200 حالة إجهاض و 200 امرأة بالولادة الطبيعية. وقد تم جمع البيانات باستخدام جدول المقابلات مع أسئلة حول التركيبة السكانية وبنود محددة بشأن تاريخ الإجهاض. معلومات حول العمر، ومحو الأمية، والإجهاض، ونوع الإجهاض، والتاريخ العائلي للإجهاض، ونمط حياة النساء، والملف الشخصي للمريضة الخاضعة للإجهاض. نتائج هذه الدراسة تظهر ان النساء اللاتي تعرضن للإجهاض كانت أكثر شيوعا بين الشابات (38.5%) والفئة العمرية الأكبر سنا (5.5%). وكذلك النساء المعرضات إلى العمل الشاق (31.3%)، التعرض الطويل للكمبيوتر (61.5%) والموجات الكهرومغناطيسية وكانت (19.5%). كان الإجهاض الغائب (37.0%) والإجهاض المتعمد (18.0%) الأنواع الأكثر شيوعا. وخلص إلى أن المرأة المجهضة كانت أكثر شيوعا بين الفئة العمرية الأصغر سنا. كاملة، وكان الإجهاض الغائب من الأنواع الأكثر شيوعا. عوامل الخطر تلعب دورا هاما في حدوث الاجهاض، وبالتالي ينبغي أن تكون ممرضة الأمومة في حالة تأهب للكشف المبكر وتحديد هذه العوامل والحمل غير المرغوب فيه ويجب دائما أن تعطى أولوية قصوى و بذل كل المحاولات للقضاء على الحاجة للإجهاض .