Obstet Gynecol Cancer Res. 2016 June; 1(1):e7539. doi: 10.17795/jogcr-7539.

Published online 2016 May 28. **Brief Report**

Trends in Techniques of Abortion in Iran from 1994 to 2014

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Received 2016 April 01; **Accepted** 2016 May 15.

Abstract

Abortion is desperately selected by some females who cannot continue their unintended pregnancies in all societies, some will suffer complications and some will die. Annual number of induced abortion has increased in the developing countries but the maternal death related to unsafe abortion has declined in the world since 2003. Medical abortion has contributes to this decline. In Iran, abortion rate of one per four female is estimated. The current study evaluated the technique of induced abortion among mothers with parity score of 0 -1 (0.49), who attempted abortion; approximately 65 females performed induced abortion medically by misoprostol in 50.7%, surgically by curettage in 28% and manual vacuum aspiration (MVA) or vacuum curettage in 18% of the cases at the gestational age of six weeks. Since previously mentioned technique of abortion was surgical; the unsafe and clandestine abortions with 1.35% maternal death in the 1990s later changed to medical abortion by dinoprostone (prostaglandin E2) in the 2000s and now medical abortion is replaced by misoprostol (prostaglandin E1) in the 2010s. Complete abortion occurred in approximately 60% of the misoprostol cases. The parity score and gestational age in abortion cases have declined. Failure of withdrawal method of contraception (57%) and unmet need to modern effective contraception are contributing factors in these abortions. The trends in abortion are replaced by medical abortion with less morbidity at earlier stages of pregnancy. Traditional contraception and lack of effective contraceptive facilities and accessibilities are likely to increase unintended pregnancies and consequently abortions as well.

Keywords: Abortion, Misoprostol, Dinoprostone, Curettage, Vacuum Curettage

1. Background

Approximately 20 million unsafe abortions are performed annually worldwide and 47000 females die due to complications of unsafe abortion (1). About 98% of unsafe abortions occur in the developing countries and it is responsible for one in eight or 13% of all causes of maternal death (2). In Iran, an abortion rate of one per four female is estimated (3). Maternal deaths from unsafe abortion declined from 56000 in 2003 to 47000 in 2008 worldwide, indicating that the risks of unsafe clandestine abortions have decreased and medication abortion may likely contribute to declining maternal mortality and morbidity of unsafe abortion (1-5). Medication abortion is performed by combination of mifepristone and misoprostol (2).

Misoprostol is used for medical abortion with mifepriston or alone. It is administered orally or used by vaginal root. Each tablet contains 200 mcg misoprostol produced by Searle and Company (now Pfizer, New York, USA) under Cytotec® trade mark (6). Originally, misoprostol as a synthetic prostaglandin E1 analogue was administered to prevent and treat gastric ulcer diseases. One of the effects of this agent is dilatation of cervix and also treating missed abortion or is used to induce labor. Trend of medication abortion has resulted in declining maternal death worldwide.

2. Objectives

In order to detect the prevalence of medication abortion, the current study was performed to evaluate the changes in the technique of induced abortion during two decades from 1994 to 2014.

3. Patients and Methods

In a cross sectional study was conducted from 2013 to 2014 at a clinic affiliated to Shahid Beheshti University of Medical Sciences in Tehran, Iran. A questioner was filled out among females examined for obstetrics or gynecology complains and asked them to participate in the study if they had a history of induced abortion before attending the clinic. Including criteria were attempting to interrupt the unintended pregnancy medically or surgically during the last five years when misoprostol was intro-

duced to obstetrics clinics for missed abortion and ripening of the cervix as well. Legal induced abortion and spontaneous abortions were not included. Detected obstetrics history included gravid and parity score, abortion and gestational age. Technique of abortion and outcome of the process were detected as well. Descriptive statistics including mean and average were checked. Data were recorded confidentially without the patients' identities.

4. Results

In the current study, 65 forms were completed. Mean age of these patients was 30.29 (ranging: 18 - 45) years, gravid 2, parity (0 -1) 0.49 and 26 % had repeated abortions; one case had three consecutive abortions. Gestational age was six weeks (ranged from four weeks and five days to thirteen weeks).

Technique of abortion was medical abortion by misoprostol (2 - 12 tablets) in 33 patients (50.7%) and two cases performed abortion by injection of dinoprostone (prostaglandin E2).The remaining 46% (30 cases) had surgical abortion including curettage in 28% and manual vacuum curettage (MVA) or vacuum curettage in 18% of the cases. Reported side effects of misoprostol were nausea, vomiting and abdominal cramp without serious complications. In six cases of misoprostol and also four cases of MVA the curettage was conducted or dinoprostone was injected during this process to make sure that the uterus is evacuated. Approximately 60.5% had complete abortion by once or repeated doses of misoprostol. Retaining placenta following usage of misoprostol was reported in eight cases and six out of these cases had curettage to complete abortion. Retained placenta was observed in four cases of MVA and one case of curettage. One case had perforation of the uterus by curettage during completion of the evacuation. And one case of post abortion infection was reported in surgical method. No serious maternal morbidity or mortality was reported except one case of uterine perforation who had laparotomy to evaluate the complication. Unintended pregnancies were the failure of contraception methods of withdrawal in 37 (57%) cases, 13 cases (20%) had no contraception (unmet need), eight cases used condom and the rest were breast feeding, emergency contraception and intrauterine device (IUD). One case had abortion due to gender selection and another one interrupted a planned pregnancy.

5. Discussion

5.1. Findings and Interpretation

The current study stated that the trends in abortion replaced by medical abortion using misoprostol at the earlier stages of pregnancy with lower parity score of the females. Approximately 40% of the cases faced retention of conception tissue and incomplete abortion with predictable consequences and needed more post abortion care. According to Coelho et al. (7), despite the lack of a safe alternative for abortion, misoprostol is not an appropriate abortion method. Besides, there are reports of perforation of the uterus in females with uterine scar due to previous cesarean section or other operations.

5.2. Strengths and Weaknesses of the Study

The strength point of this report was to determine the trends of the abortion techniques in Iran within two decades.

Some females do not reveal to have performed abortion; therefore, they may have had other techniques of abortion, not necessarily medical abortion, and it limits generalization of the study to all induced abortions. Besides, retrospectively checking of the events is not without recall bias, nor revealing the exact details of the procedure is always right and reliable. These limitations are negligible. Abortion, like suicide or addiction, is not an easy subject to study where abortion is prohibited and illegal, therefore it has hidden margins. This item could be a weak point of the study and a strength point as well.

5.3. Relevance of the Findings: Implications for Clinicians and Policymakers

Annually ten thousands of females attempt at abortion in Iran and face dangerous conditions with complications and even death. Prevention of abortion and unintended pregnancies are task forces in family health departments. Attempting to induce abortion has adverse effect on physical and mental health of females and their families and a big financial burden on public health care system. In the developed countries the rate of induced abortion has declined. In Scandinavian countries, except Sweden, the rate of abortion has decreased and they could lower proportion of induced abortion to live birth rate (8); it means that family planning works well in these countries; 82% of unwanted pregnancies occur in females with unmet need for contraceptions (2, 9). Traditional contraception including withdrawal method is the most prevalent method in Iran and it is estimated that 21% of the couples use this method (10). In the study by Erfani and McQuillan (3)about 50% of induced abortions occurred in the cases who had withdrawal method (11) and in the present survey 57 % of couples used this method as well. As mentioned in the editorial by Amy, unintended pregnancy and unsafe abortion in traditional methods and unmet need would be higher

Table 1. Trends in Techniques of Abortion in Iran, 1994 - 2014

Parameters	1994	2002	2014
Mean age and range, y	31 (15 - 48)	30 (17 - 47)	30 (18 - 45)
Contraception method before abortion	N/A	Withdrawal 44% and unmet need 37%	Withdrawal 57%, unmet need 20%
Parity score	3	1 - 2	0 - 1 (0.49)
Mean gestational age, weeks	9 ± 1	8.5	6
Main procedure for abortion	Non-medical device and hysterometer in 61.5% Curettage of incomplete or septic abortion in 77%	dinoprostone (PGE2) 78% and D&C 22%	Misoprostol (PGE1) 50.7% , D&C 28% and vacuum curettage 18%
Complete abortion at first attempt	3.1%	40.6%	60.5% using misoprostol alone
Serious maternal morbidity	Septic shock in 3 cases	Acute renal failure in one case	Uterus perforation during curettage in one case
Maternal death	2 cases (1.3%)	0	0
Total number	135	75	65

Abbreviations: PG, prostaglandin; D&C, dilation and curettage; MVA, manual vacuum aspiration.

(12); if free access and services to effective modern contraceptive methods would be restricted due to decline in total fertility rate, withdrawal method and unmet need will become far more prevalent and consequently unsafe abortion may increase.

Declining total fertility rate is a worldwide situation and in other societies tried to stop this change by improving to support families at child care and socioeconomic welfare; not by limiting effective contraception services.

Rate of abortion has declined in the developed countries where prevention of unplanned pregnancy is possible by effective modern contraception and reducing unmet need in this era.

5.4. Unanswered Questions and Future Research

However the maternal mortality and morbidities due to abortion have declined[7], this problem threatens thousands of females. Future studies should investigate the nationally representative samples of cases to evaluate the incidence, maternal morbidities and mortalities due to abortion. Further studies should include evaluation of the expenses of consequences resulting from unmet need and inaccessibility to effective contraception. The cause of attempting at abortion is an important issue and needs future comprehensive researches.

5.5. Conclusion

Trends in techniques of abortion confirmed that medical abortion by misoprostol is replaced by unsafe surgical abortion. It happens at the earlier stages of pregnancy with lesser complications and higher risks for being maimed. To prevent the negative impact of abortion on family and public health system it is necessary to investigate the reasons of inducing abortion.

Acknowledgments

The authors would like to thank Ms. Zahra Samavat and Ms. Parisa Dabiri for their assistance to complete the forms.

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