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ORIGINAL ARTICLE

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A study of septic abortions : trends in a tertiary hospital

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OBJECTIVE(S) : To evaluate the impact of national health policies on septic abortion trends in a tertiary hospital.

METHOD(S) : A prospective study was carried out in pre-RCH (phase I), post-RCH (phase II) and post revised Medical Termination of Pregnancy (MTP) act (phase III), to evaluate the epidemiological data of the patients of septic abortion admitted in the department of Obstetrics and Gynecology. An attempt was made to analyze the changing trends, study the impact of various government policies, and to suggest means to reduce morbidity and mortality from septic abortions.

RESULTS : There was a significant increase in the incidence of septic abortion in phase III over phase I ($Z_{I/III}$ = 6.214; P < 0.0001, highly significant). We also observed a linear trend of increasing incidence of septic abortion (x^2 for linear trend = 44.637; P < 0.0001). There was no significant difference in the mean age and parity of the cases in the three phases, (P > 0.05). While considering the nulliparous group only, there was a significant increase in the incidence in phase III as compared to phase I ($Z_{I/III}$=2.133; P < 0.05). Taking unmarried and widows together, most of the married women reported in the 1st trimester and this trend was found to be statistically significant (x^2 for linear trend = 3.997; p=0.04558). There was an increasing severity of peritonitis with criminal abortion and lower degree of sepsis with spontaneous abortion, and this was found to be statistically significant (x^2 = 12.164; P=0.0162 at 4 d.f.).Even though the increase in the cases of septic abortion over the three phases is statistically significant, increase in maternal mortality is insignificant ($Z_{I/III}$ = 0.586; P > 0.05), showing better health care services being provided by the concerned health agencies.

CONCLUSION(S) : The changing trend over the three phases shows an increase in the incidence of septic abortion in women beyond 30 years of age, in nulliparas and in primiparas. Therefore, there is an urgent need to address the unmet needs of contraception amongst these women. There is a need to popularize the Government Health Care setups as providers of free, quick and quality abortion services.

Key words : septic abortion, nulliparas, maternal mortality

Introduction

Indians are fortunate in having the most liberal laws relating to voluntary abortion thanks to the Medical Termination of Pregnancy (MTP) Act, 1971 [1]. Termination of pregnancy although a safe and easy procedure in trained hands, can produce catastrophic outcomes when performed by unauthorized or untrained people and in improper settings. Septic abortion is a significant contributor to maternal morbidity and mortality. The Shah committee estimated in 1971 that sepsis occurred in 5-20% of all abortions [2]. The government has made multitude efforts in terms of legislations and programs to overcome the menace of illegal abortions.

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Methods

The data of the present study were collected from septic abortion cases that reported to our teaching hospital. Analysis of the trends in septic abortion was carried out over three phases of one year duration each. Phase I from 1st June, 1997 to 31st December, 1998 (Pre-RCH era), phase II from 1st June, 2001 to 31st May, 2002 (Post-RCH era) and phase

III from 1st January, 2003 to 31st December, 2003 (Post-revised MTP Act 2002 era) so as to study the impact of the various programs implemented by the government during this period.

Epidemiological data of all the patients of septic abortion admitted over these periods were studied and analyzed. The data analysis was done using SPSS 11.5 for windows and EPI Info software. Appropriate univariate and bivariate statistical analysis were applied using z test, x^2 test and x^2 trend for linearity. The critical level for significance was considered to be 0.05.

Results

Table 1 depicts the incidence of septic abortion in the three different phases. The incidence of septic abortion was 4.56%, 4.56%, and 26.5% in phase I, II and III respectively. There was a significant increase in the incidence of septic abortion in phase III over phase I ($Z_{I/III} = 6.214$; $P < 0.0001$ highly significant). There was a linear trend of increasing incidence of septic abortions ($x^2_{trend} = 44.637$; $P < 0.0001$).

TABLE 1. Incidence of septic abortions in the three phases.

Study period	Obstetric admissions	Abortion admissions	Septic abortion	Normal abortion
Phase I (1st June, 1997 to 31st December, 1998)	2862	592	27 (4.56%)	565 (95.04%)
Phase II (1st June, 2001 to 31st May, 2002)	2008	337	15 (4.56%)	322 (95.04%)
Phase III (1st January, 2003 to 31st December 2003)	2687	166	44 (26.5%)	122 (73.5%)

$Z_{I/II} = 0.078$; $P > 0.05$ $Z_{I/III} = 6.214$; $P < 0.0001$ $Z_{I/II} = 6.118$; $P < 0.0011$,

Table 2 shows age-wise distribution of the cases in the three phases. Mean age was 25.83, 24.83 and 26.59 years in phase I, II and III respectively. There was no significant difference in the mean ages of the three phases ($P > 0.05$).

Table 2. Age wise distribution.

Age (Years)	Phase I n=27	Phase II n=15	Phase III n=66
15-20	2 (7.4)	3 (20)	6 (13.6)
21-25	10 (37.04)	5 (33.3)	12 (27.2)
26-30	10 (37.04)	4 (26.7)	10 (22.7)
> 30	5 (18)	3 (20)	16 (36.3)
Mean ± SD	25.83 ± 4.39	24.83 ± 5.3	26.59 ± 5.42

Figures in parenthesis indicate percentage.

Table 3 shows parity wise distribution of the cases. Mean parity of the study population was 2.70, 2.2 and 2.2 in phase I, II, III respectively. There was no significant difference in the parity of the study population in the three phases ($P > 0.05$).

While considering only the nulliparous group, there was a significant increase in the incidence in phase III as compared to phase I ($Z_{I/III} = 2.133$; $P < 0.05$ significant). Nulliparas in phase II were marginally higher as compared to those in phase I but the difference was statistically insignificant.

Table 3. Parity wise distribution.

Parity	Phase I n=27	Phase II n=15	Phase III n=44
0	2 (7.4)	3 (20)	11(20.4)
1	3 (11.1)	2 (13.3)	5 (11.3)
2	6 (22.2)	3 (20)	7 (15.9)
3	10 (37.04)	3 (20)	11(25)
4	2 (7.4)	4 (26.6)	5 (11.3)
> 4	4 (14.8)	0	5 (11.3)
Mean ± SD	2.70 ± 1.41	2.2 ±1.52	2.20 ±1.69

For nulliparous cases – $Z_{I/II} = 1.096$; $P > 0.05$

$Z_{I/III} = 2.133$; $P < 0.05$ Significant $Z_{II/III} = 0.41$; $P > 0.05$

Table 4 shows the correlation between marital status and gestational age at which abortion was sought. It clearly shows that compared to unmarried and widows taken together, since both of them face the common social stigma of pregnancy, most of the married women reported in 1st trimester and this trend was statistically significant (x^2 for linear trend = 3.997; $P = 0.04558$).

Table 4. Correlation between marital status and gestational period.

Marital status	Trimester			Total
	I	II	III	
Married	57	16	6	79
Unmarried	1	3	1	5
Widow	1	1	0	2
Total	59	20	7	86

x^2 for linear trend = 3.997; P = 0.04558

It is clear from Table 5 that there was an increasing severity of sepsis in criminal abortions and lesser degree of sepsis with spontaneous abortions, and this was found to be significant (x^2 = 12.164 at 4 d.f.). It should be noted that 2 cases in phase II and 14 in phase III responded well to medical treatment and did not require any surgery.

Table 5. Correlation between type of abortion and grade of sepsis.

Type of abortion	Grade of sepsis			Total
	I	II	III	
Spontaneous	7	2	2	11
Criminal	13	27	33	73
MTP	1	0	1	2
Total	21	29	36	86

χ^2 = 12.164; P = 0.0162 at 4 d.f.

Table 6 shows the various operative procedures done on cases of septic abortion over the three phases. It clearly shows that there is not much change in the management of the septic cases.

Table 6. Surgery done in septic abortion cases.

Grade of sepsis	Phase I	Phase II	Phase III
I	D and E – 9	D and E – 1	D and E – 8
II	D and E – 2 Removal of stick – 1	D and E – 3 Colpotomy –1 Diagnostic Laparoscopy – 1	D and E – 5 Colpotomy – 5
III	D and E – 4 Colpotomy – 1 Laparotomy – 4	D and E – 5 Colpotomy –1 Laparotomy –2	D and E – 3 Colpotomy – 3 Laparotomy – 5

It is evident from Table 7 that even though the percentage of cases of septic abortion have increased significantly in the three phases, increase in maternal mortality is insignificant showing better health care services being provided by the concerned health agencies.

Table 7. Maternal mortality in the study cases.

Phase I (3/27, 11-1%)	Phase II (1/15, 6.7%)	Phase III (%) (7/44. 15.9%)
Septic shock with pulmonary embolism 1	Septic shock with renal failure 1	Septic shock with ARDS 2
Septic shock with DIC 1		Septic shock with matastatic encephalitis 2
Septic shock with renal failure 1		Septic shock with DIC 2
		Septic shock with renal failure 1

$Z_{I/II}$ = 0.503; P > 0.05 $Z_{I/III}$ = 0.586; P > 0.05 $Z_{II/III}$ = 1.09; P > 0.05

Discussion

From times immemorial, termination of unwanted pregnancy is practiced throughout the world, with or without legal or social sanction. MTP, a safe and easy operation in trained hands becomes life threatening when performed by untrained persons in unhygienic conditions. The ICMR Collaborative study [3], Meenakshi et al [4], and Sinha and Mishra[5] have shown that septic abortions are mostly sought by married women between 21-30 years of age. The ICMR study [3] states that only 2.5% abortions are legal. While Sinha and Mishra [5] state that 6.5% abortions are legal.

The Government of India legalized abortions by passing the MTP Act in April 1971. In India in the year 1995-96, 5,66,500 pregnancies were legally terminated but about 7 million were illegal terminations accounting for about 12 times the legal abortions [6].

An urgent need was therefore felt to reach out to the less fortunate women with services. With a view to further popularize MTP Services, the Indian government formulated Reproductive and Child Health (RCH) program in October, 1997 where the target-oriented approach was replaced by community-need-assessment approach [6]. This program was implemented in 1998 in the state of Madhya Pradesh and training of the staff was undertaken in the year 2002. Phase I of the study shows the trends prior to the implementation of the RCH program, while the impact of RCH may be observed in the results of Phase II of the study.

A further liberalization of MTP Act was brought about by the revised MTP Act 2002 [7], enabling registered medical practitioners to use tablet misoprostol and mifepristone for induction of early abortion [8]. Unfortunately this has led to the view that medical abortions are an extremely safe option

even in the hands of untrained personnel, literally leading to its over the counter dispensing, and possibly an increase in unsupervised terminations.

Many people including the educated masses have again come to view medical terminations as a means of family size restriction bypassing the use of regular contraception [9]. Therefore, there has been a significant increase in the incidence of uncared for abortions and as many as 4.5% (2/44) of septic abortions in phase III have followed legal termination in our study .

The changing trend over the three phases shows an increase in the incidence of septic abortion beyond 30 years of age, in nulliparas and in primiparas. Therefore, there is an urgent need to address the unmet needs of contraception amongst these women particularly by the private sector, which still remains a major provider of MTP services.

Possibly as a result of sex education and counseling in schools and colleges and greater awareness of contraception, there has been no increase in unmarried girls and widowed women coming with septic abortions.

In our study, in phase III, 4.5% (2/44) of septic abortions followed MTP, which may mean that strict norms have to be followed in recognizing the personnel and setups as providers of MTP services.

Inspite of the advent of newer, safer and potent antibiotics, many women still land up in grade III sepsis and reach tertiary care centers in moribund condition. There is also an increase in the number of deaths due to septic abortion in phase III. On looking into the causes it was noted that most women with sepsis are managed in private setups and only when they become extremely ill, they are referred to medical college hospitals. This is possibly the reason why most patients have to be managed conservatively [4], and there has not been much change in the management protocol. Emphasis needs to be placed on early referral of such patients to tertiary care hospitals with expertise in and facilities for handling such cases.

There is a need to popularize the Government Health Care setups as providers of free, quick and quality abortion services. Women should be provided complete information about the various methods. It should be emphasized that repeated MTPs should be avoided and MTP should not be used as a method of contraception. Post-MTP contraception should be made mandatory.

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References

1. Park K. *Park's textbook of Preventive and Social Medicine, 15th edn.* Jabalpur. M/s Banarasidas Bhanot. *1971:332.*
2. *Shah Committee Report*. Ministry of Health and Family Planning New Delhi. Government of India, *1971:8*
3. *ICMR Bulletin*: Sequeale of induced abortion. *1979.*
4. Meenakshi, Sirohiwal D, Sharma D et al. A review of septic abortion. *J Obstet Gynecol India 1995;45:186-9.*
5. Sinha HH, Mishra MG. A study of septic abortion. *J Obstet Gynaecol India 1999;49:50-3.*
6. Mukherjee AK. Demographic changes, Socio- Economic Trends and the family welfare programme in India. In: Chaudhari SK. *Practice of Fertility Control. 5th edn. New Delhi, Elsevier. 2001:29.*
7. Revised MTP programme 2002. *The Gazette of India No-281, Part II \ section 1, sub section (i).*
8. *The Medical Termination of Pregnancy Amendment Act 2002, No 64 of 2002.*
9. Konar H. Changing trends in septic abortion. *J Obstet Gynaecol India 1992;42:288-92.*