

## Original Article

# Septic abortion - current scenario in a tertiary care hospital

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### Abstract

**Objectives :** To study the incidence of septic abortion and reasons thereof, besides their socio-demographic profile, abortion providers, procedures used, complications faced, treatment provided, and attitude of patients towards contraception. **Methods :** All patients admitted with septic abortion during the period April 2001 and December 2003 were included in the study. **Results:** Seventy-five women, averaging 27.9 ( $\pm 4.9$ ) years, sought abortion for reasons like limiting family (44%), spontaneous bleeding (20%), economic limitation (13.3%), spacing etc from dais (36%), ANMs (16%), nurses (22.6%) and even doctors (22.6%). Instrumentation or crude methods were used on an average of 11.8 days prior to hospital admission for pain in abdomen, distension, fever bleeding etc. Septic shock was seen in nine. Various grades of sepsis/pelvic inflammation were seen in all. In 47 patients (62.6%) who underwent laparotomy, uterine perforation (40%), bowel injury (30.7%), peritonitis with blood/pus or fecal fluid (48%) were the commonest findings. Fourteen deaths (18.7%) occurred. **Conclusions :** The study highlighted the high mortality and morbidity associated with illegal abortions by unskilled providers. Unfortunately patients still approach them due to illiteracy, poverty and privacy.

**Key words:** abortion, septic abortion, unsafe abortion, uterine perforation, contraception

### Introduction

Despite a liberal abortion law (Medical Termination of Pregnancy Act of 1972), every year an estimated 5.7 million abortions (ten times the legal ones) are conducted illegally in India<sup>1</sup>. While 13 percent of maternal deaths (9-20% in India) are attributed to abortions, no substantial decline in estimated number, reported morbidity and share of illegal abortions as the cause of maternal mortality has occurred<sup>2</sup>. Abortion related death is the most preventable cause of maternal mortality, if access to services is improved.

The present study was planned to study the illegal/unsafe abortions reporting to the hospital with a view to study the socio-demographic profile of women seeking such a procedure, the provider characteristics, the method employed, and the extent of morbidity and mortality associated with such a procedure.

### Methods

Present study was conducted at our Medical College, a tertiary care teaching hospital. All cases of septic abortion from April 2001 to December 2003 constituted the study group. Patient's demographic characteristics, educational level, knowledge and use of contraception, details of past and present abortion, reason for referral, condition on admission, associated complications, treatment given, operations performed and cause of death if any, were analyzed. Dai does not possess any medical qualification while auxiliary nurse midwife

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(ANM) is a health worker trained to deliver maternal-child health (MCH) and family planning (FP) services at peripheral level.

**Observations**

Seventy-five cases of septic abortions were admitted during the 2 year study period ending December 2003, while 4541 Medical Termination of Pregnancies (MTP) were performed during the same period in the hospital. Septic abortions formed 1.65% of the MTPs and 0.11% of the total 67,358 obstetrical admissions.

Socio-demographic characteristics are given in Table 1. The average age of the patients was 27.9 ± 4.9 years, ranging from 18-45 years. Majority women were Hindus (77.3%) housewives (94.7%), and married (97.3%). Mean gravidity was 4.13±1.7 with a range of 1-8. Interestingly four were primigravidas and two were eighth gravidas (Table 2).

**Table 1. Socio-demographic characteristics (n=25).**

| Characteristics                       | Number | Percent |
|---------------------------------------|--------|---------|
| <b>Age</b>                            |        |         |
| Average 27.9±4.9 (Range 18-45 years)  |        |         |
| <20                                   | 3      | (4%)    |
| 21-25                                 | 22     | 29.3    |
| 26-30                                 | 40     | 53.4    |
| 31-35                                 | 6      | 8       |
| 36-40                                 | 3      | 4       |
| >40                                   | 1      | 1.3     |
| <b>Residence</b>                      |        |         |
| Rural                                 | 24     | 32.0    |
| Urban                                 | 18     | 24.0    |
| Urban slum                            | 33     | 44.0    |
| <b>Religion</b>                       |        |         |
| Hindu                                 | 58     | 77.3    |
| Muslim                                | 17     | 22.7    |
| <b>Occupation</b>                     |        |         |
| Housewife                             | 71     | 94.7    |
| Self-employed                         | 4      | 5.3     |
| <b>Education</b>                      |        |         |
| Nil                                   | 53     | 70.7    |
| Upto 5 <sup>th</sup> class            | 15     | 20.0    |
| 6-12 class                            | 7      | 9.3     |
| <b>Monthly family income (Rupees)</b> |        |         |
| <2,000                                | 20     | 26.7    |
| 2000-5,000                            | 51     | 68.0    |
| 5001-10,000                           | 4      | 5.3     |

**Table 2. Profile of present abortion (n=75).**

| Characteristics   | Septic abortion (n=75) |            |
|---|------------------------|------------|
|   | Number                 | Percentage |
| <b>Gravidity</b>  |                        |            |
| Mean  | 4.13±1.7               |            |
| 1   | 4                      | 5.3        |
| 2-3   | 28                     | 37.3       |
| 4-5   | 26                     | 34.7       |
| 6-7   | 15                     | 20.0       |
| ≥8  | 2                      | 2.7        |
| <b>Duration of pregnancy (weeks)</b>                      |                        |            |
| Mean  | 9.1±3.3                |            |
| <8 weeks  | 23                     | 30.7       |
| 9-12 weeks  | 44                     | 58.7       |
| >12 weeks   | 8                      | 10.6       |
| <b>Place of procedure</b>                                 |                        |            |
| Patient's house   | 10                     | 13.3       |
| Private clinic  | 48                     | 64.0       |
| Government clinic   | 3                      | 4.0        |
| Dai's home  | 14                     | 18.7       |
| <b>Provider</b>   |                        |            |
| Unskilled worker  | 2                      | 2.7        |
| ANM   | 12                     | 16         |
| Dai   | 27                     | 36         |
| Nurse   | 17                     | 22.6       |
| Doctor  | 17                     | 22.6       |
| <b>Method</b>   |                        |            |
| Curette   | 55                     | 73.3       |
| Catheter  | 4                      | 5.3        |
| Roots of plants   | 3                      | 4          |
| Stick   | 4                      | 5.3        |
| Others  | 7                      | 9.3        |
| Not known   | 2                      | 2.7        |
| Average abortion - admission interval 11.8±5.4 days       |                        |            |
| Antibiotic use before coming to the hospital: 49 (65.3%). |                        |            |

Past history of spontaneous abortion was present in five women (a total of eight episodes), which was followed by D&C in only two. 13.3 percent women had undergone MTP earlier, 80% of times in private clinics, with use of same local methods. None of them faced any complications.

These women had pregnancy terminated at an average of 9.1±3.3 weeks (6-20 weeks), majority (44%) getting it done between 8 and 12 weeks of gestation. Table 2 gives the detailed profile of the current abortion. In 58 (77.3%) cases the abortion was induced either by a Dai (36%), an ANM (16%), a nurse (22.6%) or an unspecified person (2.7%); all of these were unqualified and incompetent to perform the procedure. Induction in 17

victims was reported to have been done by doctors though antecedents of all but five of them could not be ascertained. Majority of the procedures were done at private clinic (64%), followed by home of either the Dai (18.7%), or the patient (13.3%). Methods employed for inducing abortion, in order of frequency, were curette (73.3%) plant roots or stick (9.3%), and other ones (13.3%) like catheter, cotton soaked in some liquid, tablets, injection, and combinations. Abortion was done at an average of 11.8±5.4 days prior to admission. A significant number (65.3%) of women took antibiotics prior to hospital referral.

Family size (44%), spontaneous bleeding (20%) and economic limitations (13.3%) were the major reason cited for MTP. Female sex of the fetus and unmarried status were the compelling reasons in two patients while need for spacing the birth was the reason in six and contraceptive failure in three. Interestingly 77.3% of women had never been on any form of contraception though 82.7% were aware of some method, mostly condoms (82.7%) and intrauterine device or oral contraceptive pill (78.6% each). Only 4% women were current contraceptive users.

Table 3 gives details of presenting complaints, complications, and operations performed. Patients attended or were referred to our hospital for symptoms like lower abdominal pain (61.3%), prolonged fever (36%), vomiting (33.3%), vaginal bleeding (28%), abdominal distension (21.3%) either with constipation (20%) or diarrhea (8%), and inability to pass flatus. Seven patients had acute urinary obstruction. Five cases were referred by private nursing homes, perhaps due to economic considerations or complications.

All cases were admitted in various stages of sepsis or pelvic inflammation. Foul smelling discharge and vaginal bleeding were seen in 21.3% and 13.3% respectively. Two patients had intestines coming out of the vagina and one had a stick still stuck in the vagina. Nine (12%) were in septic shock. Blood transfusion was required in as many as 68% (average 2.5 units, range 1-6 units). Ultrasonography detected peritoneal fluid in 19 (25.3%), uterine perforation in 22 (26.6%), product of conception in 15 (20%), tubo-ovarian mass/abscess in 10 (13.3%), gut perforation in 3 (4%), fluid in pouch of Douglas in 7 (9.33%) and multiple fluid pockets in the peritoneal cavity in 13 (17.3%). Medical complications observed were acute renal failure in eight, hypoxemia in 3, hematemesis, stress ulcer, and septic shock in 6,

septicemia in 4, pneumonia in one, disseminated intravascular coagulation in one, hypocalcemia in one, and pancreatitis in one.

**Table 3. Major complaints, complications and operations performed.**

| Presenting complaints<br>Complaints                 | Septic abortion |            |
|---|-----------------|------------|
|   | Number          | Percentage |
| Abdominal pain                                      | 46              | 61.3       |
| Fever   | 27              | 36.0       |
| Vomiting  | 25              | 33.3       |
| Vaginal bleeding                                    | 21              | 28.0       |
| Abdominal distension                                | 16              | 21.3       |
| Constipation  | 15              | 20         |
| No flatus   | 9               | 12         |
| Localized swelling                                  | 9               | 12         |
| Urinary obstruction                                 | 7               | 9.3        |
| <b>Complications</b>                                |                 |            |
| Shock   | 9               | 12         |
| Severe anemia (<6 g/dL)                             | 13              | 17.3       |
| Renal failure                                       | 8               | 10.6       |
| Adult respiratory distress syndrome                 | 2               | 2.6        |
| Septicemia  | 4               | 5.3        |
| Maternal death                                      | 14              | 18.6       |
| <b>Management</b>                                   |                 |            |
| Conservative management alone                       | 15              | 20         |
| Surgery after conservative management of > 24 hours | 15              | 20         |
| Surgery   | 45              | 60         |
| <b>Operations needed</b>                            |                 |            |
| Laparotomy  | 47              | 62.6       |
| Uterine repair                                      | 15              | 20.0       |
| Total abdominal hysterectomy                        | 5               | 6.6        |
| Subtotal hysterectomy                               | 4               | 5.3        |
| Bowel resection and anastomosis                     | 10              | 13.3       |
| Colpotomy   | 7               | 9.3        |
| D & E with laparotomy                               | 6               | 8.0        |
| D & E without laparotomy                            | 7               | 9.3        |
| Ileostomy   | 4               | 5.3        |
| Intestinal Repair                                   | 3               | 4.0        |

Conservative management included antibiotics, intravenous fluids, vasopressor support, and oxygen. Many patients were shifted to intensive care due to septic shock, multiple organ dysfunction (MODS) adult respiratory distress syndrome (ARDS) etc. Out of 75 patients 15 could be managed with conservative treatment while the remaining required surgery. Pelvic abscess was drained by colpotomy in seven while suction evacuation for retained products with (6) or

without (7) laparotomy was done in 13 patients. Laparotomy was performed in 62.7% of cases with findings of bowel injury in (23), uterine perforation in (30), peritonitis with blood/pus or fecal matter in 36, pus in pouch of Douglas in five, and adhesions/multiple pus pockets in five. Ultimately uterine repair was carried out in 15, total abdominal hysterectomy in five, subtotal hysterectomy in four, bowel resection and anastomosis in 10, ileostomy in four and omentectomy in three. Peritoneal was routinely done at laparotomy.

Considering the seriousness of their condition on admission, 56 patients (74.6%) recovered enough to go home while five left against medical advice. Fourteen deaths (18.67%) occurred due to sepsis related complications in 10 (ARDS-2, Septicemia -4, Septic shock - 2, MODS-2), electrolyte imbalance in 1, pulmonary embolism in 1 and acute renal failure in 2. The average duration of stay in the hospital was  $18.3 \pm 13.7$  days (range 1 to 90 days). In contrast of the 4541 MTPs performed in the hospital, 262 (5.8%) reported for complications like incomplete abortion, PID, urinary infection, menstrual disorders etc. but laparotomy was required in only 5 of 11 who were admitted for small uterine perforation and there was no mortality.

## Discussion

The purpose of the study was essentially to find out whether illegal abortions are still prevalent despite the exhaustive efforts by the Government to provide proper facilities for safe abortion through MTP act and to know the extent of the morbidity and mortality in women undergoing such a procedure.

Contrary to the popular belief, most women seeking abortion are not unmarried teenagers. Rather they are married, living in stable relationships and already have several children<sup>3</sup>, as was apparent in our study. Being illiterate (70%), belonging to economically weaker sections of the society, and living in semiurban areas or slums in and around the city, these women sought abortion because the pregnancy was an unwanted one. The reason why women with high gravidity (31 were pregnant fifth time or more) opted for termination of the pregnancy was probably to limit family size or future expenses. According to the study reported by Mukhopadhyaya and Das<sup>4</sup> in 1975 multiparity with socio-economic status was the predominant cause (70%) of illegal abortion, a situation still prevalent today. Interestingly, newly found indication was female fetus

(sex selective abortions), primarily due to cultural premium on producing male heirs and widespread availability of ultrasound facilities<sup>5</sup>. Religious taboos/practices, lack of information, and unavailability of services at community level may be responsible for these women seeking locally available services.

More than 10,000 legally registered abortion facilities exist in India; most are based in urban areas and are inequitably distributed among the states<sup>6</sup>. Even where facilities exist, they may not be functional because of inadequate supplies or because providers are unavailable, inadequately trained and not confident of performing the procedure. Further, the need for confidentiality drives women to unsafe traditional providers, who are familiar, accessible and affordable even if safer facilities exist. The ANMs/nurses, performed these procedures clandestinely in their clinics, in an unhygienic manner, often using dilation and curettage method. The Dais, working in their own home, used traditional techniques, more as social obligation than a profession. Still the crudeness of their methods like inserting roots of *Calotropis gigantea*, cotton dipped in medicine with/without the help of a stick or catheter etc. was responsible for majority of complications. Interestingly, the medically qualified people also were responsible for a high number of complicated abortions (22.7%), noted in earlier studies of Konje et al<sup>7</sup> and Sule-Odu et al<sup>8</sup>. A medically qualified person can be just as much a quack as one that is not medically qualified or trained in procedure.

In our society with low knowledge or use of contraception, the incidence of unwanted pregnancy is bound to be high. In our study, though 85% of women were aware of some method, 77.3% had never used it, a fact in concurrence with an extensive thirteen postgraduate teaching hospital study of abortion cases in different regions of India<sup>9</sup>. Coupled with deficiency in health care systems, socio-cultural barriers and economic inequalities, women are driven towards unsafe options<sup>5</sup> though seeking early termination (9 weeks in this study). Resultant morbidity and mortality are heart rending.

Clinically appearance of lower abdominal pains, fever, vomiting, vaginal bleeding, unhealthy discharge and distension are the commonest symptoms at admission following unsafe abortion with complications. Patients with bowel injury had features of obstruction and peritonitis in spite of (49 of 75) receiving prior antibiotics. With the introduction of infection in reproductive tract,

alongwith retained products of conception and bowel inflammation, there is rapid progression to sepsis/septicemia/septic shock by the time patient reaches hospital (averaged 11 days in our study). Once the shock sets in (9 cases), the patient required intensive life support measures. Appearance of multiple organ dysfunctions like that of kidney (5 of 6 with deranged kidney function died) or lungs heralds poor prognosis and must be prevented. This means prompt surgery and corrective procedures like uterine repair/bowel resection or anastomosis and peritoneal lavage. Eventually 80% of our patients underwent some surgery, 47 requiring exploratory laparotomy, with the usual support of blood transfusion (average 2.5 unit), intravenous fluids and higher antibiotics.

In this analysis and as in many other hospital based studies, spread over thirty years<sup>10,11</sup>, 18.7% women died directly as a result of septic abortion. This translates into a maternal mortality ratio of 18,667 per 1,00,000. The risk of dying from unsafe abortion in this series was 62 times more than the risk of maternal deaths (0.3%) from other causes in our hospital. The cause of death was sepsis or related complications. This could well have been avoided if family planning education, contraceptive measures, and safe pregnancy termination facilities were generally available and offered in an acceptable manner at the community level. Further, a safe MTP procedure requires only few hours of stay in the hospital compared to a patient of complicated abortion needing over a fortnight (18.3% days in this study) to recover. Septic abortion poses excessive burden on the provisions of maternal and emergency services.

## Conclusion

Reducing morbidity and mortality will require stringent regulations and commitment at midlevel providers. The unauthorized providers must be dissuaded to provide pregnancy termination due to the risks involved, and counseled to refer such women to government centers with facilities, failing which they should be severely penalized. Further, a wide and intensive dissemination of information about all aspects of abortion and MTP

facilities available at hospital /primary health center is required along with promotion of contraception. Only then we can hope to bring down the unnecessary deaths and sequelae.

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