MORTALITY ASSOCIATED WITH INDUCED ABORTION

by

KAMAL K. DESHMUKH,* M.D., D.G.O.

R. ANJENEYELU,** M.D., D.G.O.

and

S. B. MUJUMDAR,*** M.D.

One of the important causes of maternal deaths is abortion, either spontaneous or induced. Since the introduction of M.T.P. Act 1971, 28 deaths were recorded out of 89,687 induced abortions in Maharashtra. During the same period (April 1972 to March 1977) 5 deaths were recorded out of 3,572 induced abortions carried out at J.J. Hospital attached to Grant Medical College, Bombay. This paper deals with the detailed study of these five maternal deaths.

TABLE 1

Medical Termination of Pregnancy, J. J. Hospital, Bombay 1972-77

Period	No. of MTPs Performed	Monthly average
1972-73	330	27.5
1973-74	600	50.0
1974-75	613	51.08
1975-76	701	58.04
1976-77	1328	110.66

The average number of MTPs carried out per month went from 27.5 to 110.6.

Since 1972, the number of MTP is increasing every month. The average per month in 1972-73 was 27.5 as against 110.6 in 1976-77 (Table I). Out of 3,572 MTPs 2,470 were carried out before 12 weeks of gestation with 1 maternal death and 1,152 cases were terminated between 12 to 20 weeks of gestation with 4 deaths (Table II) indicating that delaying abortion from the first trimester to the second trimester exposes women to an increased risk of complications.

TABLE II

Duration of Pregnancy in MTP Cases

Duration of pregnancy	Total No. of cases	Percentage	No. of deaths	Death rate 100,000 MTP
Before 12 weeks	2420	67.76	1	41.32
Between 12 to 20 weeks	1152	32.25	4	347.2
Total	3572	100	5	140

The risk to the life due to MTP increase proportionately with the advancement of pregnancy.

Abortion Techniques: During first trimester, MTP was done either by suction curettage or by dilatation and curettage. Out of 3,572 cases, 514 cases were terminated by dilatation and curettage and 1,906 were terminated by suction curettage. In second trimester, most of the cases were terminated by intra-amniotic hypertonic saline. Extraovular Ethacredine Lactate was used in 286

*Associate Professor.

**Professor in Obstetrics & Gynaecology, Grant Medical College, Bombay.

***Professor in Obstetrics & Gynaecology, Medical College, Sholapur.

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cases, hysterotomy in 40 cases and hysterectomy as a method for MTP with sterilization in 13 cases. There was no mortality with D & C, extraovular Ethacredine Lactate, hysterotomy and hysterectomy (Table III).

Out of 5 deaths 1 was after suction curettage and 4 after intra-amniotic saline (IAS). There was a relatively high incidence of complications mainly infection with IAS as compared with the other methods. Details about the 5 deaths associated with induced abortion is shown in (Table IV). All 5 deaths were in unmar-

TABLE III

Methods of Medical Termination of Pregnancy and Maternal Deaths

	Total No. of cases	Percentage	No. of deaths
1. Dilatation of curettage	514	14.39	Nil
2. Suction Curettage	1906	53.36	1
3. Intra-amniotic saline	813	22.76	4
4. Extra-ovular instillation normal saline, rivanol	286	8.01	Nil
5. Hysterotomy	40	1.12	Nil
6. Hysterectomy	13	0.36	Nil
Total	3572	100.00	5

TABLE IV

Showing the Details About Cases of MTP Deaths

Year	Period	Age Rel.	Marital status	Method of MTP	Compli-cations	Post-Mortem Report	Couse of death
1973	12 wks	17 yrs. Hindu	Unmarried	Suction Curettage	Sudden Shock	Bilateral adrenal haemorrhage. No uterine perforation	Acute adrenal failure.
1974	20 wks	19 yrs. Hindu	-do-	IAS by vaginal rout	Infection	P.M. not done	Septica-emia
1975	20 wks	20 yrs. Hindu	-do-	I.A.S.	Cervical tear & Tetanus	Chronic peripan-creatitis and non-specific Endome-tritis	Tetanus
1975	18 wks	20 yrs. Hindu	-do-	-do-	Urticaria and con-vulsions	Interstitial pneumonitis & septicaemia	Septici-mia
1976	20 wks	20 yrs Hindu	-do-	-do-	Perito-nitis pelvic abscess	Peritonitis with peritoneal adhes-ions Hydrothorax and Pulm. Tuberculosis Syphilitic lesions in the vagina & Labia Majora	

ried young primigravida. Age incidence varies from 17 to 20 years. Out of 5 deaths, postmortem examination was done in 4 cases. The causes of death were not sharply defined in 2 cases. Septicaemia and peritonitis was the cause of death in 3 cases, tetanus in 1 case and bilateral adrenal haemorrhage in 1 case.

Case 1

Primigravida, 17 years, unmarried girl admitted for termination of pregnancy at 12 weeks gestation. Suction curetage was done under general anaesthesia. After completing the procedure patient became pulseless and B.P. was not recordable. Patient died after half an hour inspite of resuscitative measures. On postmortem examination there was no injury to uterus except bilateral adrenal haemorrhage.

Case 2

Unmarried primigravida, 19 years old admitted at 20 weeks of gestation for termination of pregnancy. Intra-amniotic saline instillation of 150 c.cs. was done per vaginum as abdominal route was unsuccessful. Patient aborted completely after 51 hours with pitocin drip. 24 hours after abortion patient had high fever and tenderness in hypogastrium. Patient had generalised infection which did not respond to treatment and patient died on 28th day after abortion due to septicaemia. Postmortem examination not done.

Case 3

Unmarried primigravida, 20 years old admitted at 20 weeks of gestation for termination of pregnancy. IAS instillation of 160 mls. was done and patient aborted foetus after 48 hours and placenta was removed manually after 1 hour. There was a posterior lip cervical tear which was stitched under anaesthesia. On 4th day postabortal, patient developed lock-jaw and other signs of tetanus. Tracheostomy was done as patient was breathless with severe spasm of neck muscles but could not be survived and died after 10 days. Postmortem examination showed chronic non-specific endometritis with associated lesion in the pancreas which showed chronic peripancreatitis.

Case 4

Unmarried primigravida, 20 years old admitted at 18 weeks of gestation for medical termination of pregnancy. Intraamniotic saline was instilled. Patient aborted foetus after 22 hours. An intravenous infusion of 30 units of pitocin in 560 ml. of 5% glucose saline was started. Placenta was not expelled with pitocin drip and so evacuation was done after three hours. During the procedure patient developed a urticarial rash all over body. Rash disappeared after the injection of antihistamine. Suddenly patient developed convulsion and expired inspite of resuscitative measures. Postmortem examination showed interstitial pneumonitis and septicaemia.

Case 5

Unmarried primigravida, 20 years old admitted at 20 weeks of gestation with burning micturition and ulcers on the vulva in skin V.D. department. As patient wanted to get termination of pregnancy she was transferred to Gynaecology Department. IAS was done for termination of pregnancy. Patient aborted completely after 30 hours of injection. On 9th day patient developed signs of peritonitis. Afterwards patient developed pelvic abscess which was drained by posterior copotomy. The condition of the patient was improving. But on 21st postabortal day suddenly patient had breathlessness and retrosternal pain. General condition deteriorated and patient expired on 22nd day after abortion.

Postmortem examination showed (i) peritonitis with peritoneal adhesions and there was 1500 mls. of purulant exudate in the cavity, (ii) liver was pale and enlarged, (iii) right kidney enlarged and pale, (iv) uterus enlarged, soft endometrium congested and vessels dilated, (v) hydrothorax and tuberculosis in both upper lobes, (vi) syphilitic lesions in vagina and Labia majora.

Discussion

Mortality associated with induced abortion reported by various authors varies from country to country. In Japan there were 278 deaths in 68,60,00 legal abortions performed during the period from 1959 to 1965. Mortality rate was 4.1 per 1000,000 abortion (Potts, 1971). Tietze and Mustein (1976) estimated that mortality from legal abortions in England

and Wales (including deaths associated with legal abortions but not attributed to it) during 1970-73 was 12.3 per 100,000 abortions. The comparative figure in the United States over the same period was 6.3. During the year 1960-73 in Hungary maternal mortality rate associated with induced abortion in first trimester was only 1.56 per 100,000 induced abortions (Bognar and Andrews, 1976). This is the lowest rate observed at present in the world. Low mortality rate is attributed to the fact that pregnancies are terminated during first trimester; that the indications are mainly for social reasons and that the operations are performed under optimal conditions in hospital by specialists who have acquired great experience and skill from the large number of such operations they have performed.

In the present study mortality rate is 140 per 100,000 induced abortions. This mortality rate is very high compared with the other countries. To a large extent this difference may be explained by the longer average duration of pregnancy at which medical terminations are performed and techniques used for terminations. Out of 5 cases, 4 were terminated at 18-20 weeks by intra-amniotic instillation of hypertonic saline. Manabe (1960) had 13 deaths out of 6611 patients due to septicaemia after IAS. Wagatsuma (1965) reported 13 maternal deaths in 6611 cases of pregnancy termination between 16 to 28 weeks by IAS. He classified causes of maternal deaths in four types according to their symptoms.

1. Technical failure which caused infection or direct injection into the blood stream or into the myometrium. In our study in 1 case IAS was instilled by vaginal route as amniocentesis per abdomen was not successful. The risk of introducing vaginal organisms and consequent serious infection is too great in vaginal approach for amniocentesis. This may be the cause of generalised infection and septicaemia which is the cause of death.

2. Second cause of death in IAS is the aggravation of general complications already present due to careless evaluation of these illnesses. In our study in case 5 IAS instillation was done even in presence of active venereal infection of the vulva. Patient developed peritonitis, pelvic abscess and generalised infection in postabortal period and died of septicaemia. If MTP would have been done after treating the vulvo-vaginitis, this complication could have been avoided.

3. Third cause of death described by Wagatsuma (1965) in IAS is postpartum haemorrhage, cervical tear or uterine rupture. In our series there was 1 case of cervical tear which was repaired but on 15th day patient died due to tetanus.

4. The unknown causes which included two types of sudden deaths following shock like symptoms or vascular collapse. One type would occur immediately after the injection and the other occurs mostly postabortal. These patients show hypotension and characteristic skin rash before death. In our series Case 4 developed skin rash after abortion and convulsions. Several studies on the mechanism of the cause of death were carried out, although no definite conclusion could be drawn. Aoki (1952) observed that the injection of saline into the amniotic space of pregnant rabbits increases, the concentration of histamine in blood.

To minimise the mortality due to intra-amniotic hypertonic saline injection it is essential that 1) the patient is carefully evaluated by the specialist, who will do the procedure in a well equipped hospital and 2) patient should be kept under con-

stant observation throughout the procedure and afterwards.

Summary and Conclusions

1. During the years 1972 to 1976 in J.J. Hospital, Bombay, 5 maternal deaths were recorded among 3572 induced abortions, a mortality rate of 140 per 100,000 induced abortion.

2. Mortality in first trimester is 41.3 per 100,000 as compared to 346.2 per 100,000 in second trimester. MTPs after first trimester are considered "High-Risk" operations since both the mortality and morbidity rates are always higher than they are when the pregnancy is terminated during the first trimester.

3. Mortality is more with IAS compared with other procedures such as extra-ovular ethacredine lactate, hysterotomy or hysterectomy.

4. Induced abortions will never be without some risk. Nevertheless this may be kept to a minimum, if the procedure is carried out in the first trimester under suitable conditions by an experienced person using well established techniques.

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