Impact of the Choice on Termination of Pregnancy Act on maternal morbidity and mortality in the west of Pretoria

A M Mbele, L Snyman, R C Pattinson

Aim. To evaluate the impact of the Choice on Termination of Pregnancy Act on maternal morbidity and mortality in the west of Pretoria.

Setting. Indigent South Africans managed in two public hospitals in the west of Pretoria.

Method. Data were collected on all abortions (incomplete or induced) treated in the hospitals in the study area in 1997 - 1998 and 2003 - 2005. All cases of severe acute maternal morbidity and maternal deaths due to abortion were identified for these time periods. Data exclude referrals from outside the west of Pretoria.

Outcome measures. The case fatality rate (CFR), mortality index (MI) and maternal mortality ratio (MMR) due to abortions.

Results. In 1997 - 1998 there were 2 050 abortions, of which 80.2% were regarded as being incomplete, and in 2003 - 2005 there were 3 999 abortions, of which 42.8% were regarded as incomplete. Twenty-four women who were critically ill due to complications of abortion presented in 1997 - 1998 (a rate of 3.05/1 000 births), compared with 50 (2.76/1 000 births) in 2003 - 2005. There were 5 deaths in 1997 - 1998 (CFR of 2.4/1 000 abortions) compared with 1 death in 2003 - 2005 (CFR 0.25/1 000 abortions) ($p = 0.01$, relative risk (RR) 0.1, 95% confidence interval (CI) 0.01 - 0.89). The MI fell from 21.7% to 2.0% ($p = 0.02$, RR 0.1, 95% CI 0.01 - 0.89). The MMR was 63.6/100 000 births in 1997 - 1998 compared with 5.54/100 000 in 2003 - 2005 ($p = 0.017$, RR 0.09, 95% CI 0.01 - 0.74).

Conclusion: The introduction of the Choice on Termination of Pregnancy Act has been associated with a massive reduction in women presenting with incomplete abortions. The prevalence of critically ill women due to complications of abortion has not changed, but the CFR, MI and MMR have declined significantly.

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The impact of the Choice on Termination of Pregnancy Act of 1996 on maternal deaths has not yet been clearly defined. The 1994 national incomplete abortion survey reported 3 deaths in 803 cases.[1] A repeat national survey using very similar methodology (a multicentre, prospective, descriptive study) in 2000 reported 1 death in 761 cases and a non-significant shift from more severe cases to less severe cases.[2]

The confidential enquiries into maternal deaths in South Africa[3,4] have not yet reported a reduction in maternal deaths. One hundred and twenty maternal deaths were reported from 1999 to 2001 and 114 were reported from 2002 to 2004. If the maternal mortality ratio is calculated using the live births reported by Statistics South Africa in their Recorded Live Births[5] the maternal mortality ratio (MMR) was 4.77/100 000 live births in 1991 - 2001 and 4.91/100 000 live births in 2002 - 2004. Complications due to abortion are an important direct cause of maternal death in South Africa, being responsible for about 10% of direct deaths.[3,4,6] They were also the fourth most common cause of acute severe morbidity in a survey of three clearly defined geographical areas in South Africa.[7]

The aim of this study was to investigate the impact of the Choice on Termination of Pregnancy Act of 1996 on the number of abortions, the prevalence of critically ill women presenting with abortions and the case fatality rate in a public health system in the west of Pretoria with a defined population and referral routes.

Methods

The west of Pretoria is served by two hospitals (Kalafong and Pretoria West). Pretoria West Hospital functions as a primary level hospital and Kalafong Hospital as a secondary and tertiary hospital. All women who present to the public sector services with an abortion (induced or incomplete) would be treated by one of the two hospitals and no women would be referred out. Kalafong Hospital has been doing terminations of pregnancy (TOPs) since the original Act in 1975. At the end of 1996 it started doing TOPs in accordance with the new Act. Pretoria West did not do TOPs at the time of this study.

Data on women with severe acute maternal morbidity (SAMM) have been collected routinely since 1997 and entered on a database. SAMM has been defined previously by Mantel *et al*.[8] Intuitively, a woman with SAMM is a very ill patient, with organ dysfunction or failure, who will die without good fortune or good care. A critically ill woman was defined as a woman who had SAMM or who died. The severe morbidity rate for abortion was defined as the percentage of women who were critically ill due to abortion per total abortion cases.

Department of Obstetrics and Gynaecology, University of Pretoria, and MRC Maternal and Infant Health Care Strategies Research Unit
A M Mbele, MB ChB
L Snyman, FCOG (SA), MMed (O&G)
R C Pattinson, MD, FCOG (SA), MRCOG

Corresponding author: *R C Pattinson (rcpattin@kalafong.up.ac.za)*

The mortality index (MI) was defined as the total number of patients who died due to abortion divided by the total number of critically ill women. TOPs are performed as an outpatient procedure by midwives and data are recorded in a register. TOPs performed in the private sector were not included. All other abortions are treated by medical practitioners. Women with uncomplicated abortions have evacuations in a side ward, and any patient with a complicated abortion will have an evacuation in theatre.[9] Data on admissions due to abortion were collected from the ward register of side-room evacuations and the theatre books and correlated with the ward admissions. The numbers of births were collected from both hospitals and women from outside the area were excluded.

The chi-square test was used to compare categorical data and the relative risk (RR) and 95% confidence intervals (CIs) were calculated. The Ethics Committee of the Faculty of Health Sciences, University of Pretoria, gave approval for the initial study on the audit of SAMM and the programme remains registered. Both hospital administrations (Kalafong and Pretoria West hospitals) continue to support the audit. All information is entered on the database after removal of all patient identification.

Results

In 1997 - 1998 2 050 abortions were recorded at Kalafong Academic Hospital, of which 1 644 (80.2%) were spontaneous abortions and 406 were terminations of pregnancy (TOPs). During 2003 - 2005 there were 3 999 abortions, of which 1 710 (34.9%) were spontaneous abortions and 2 289 were TOPs. These data exclude all referrals and abortions performed in private institutions. The rate of abortions per total pregnancies declined slightly but significantly from 20.7% in 1997 - 1998 to 18.2% in 2003 - 2005. The total number of women critically ill due to abortions was 24 in 1997 - 1998 (19 women with SAMM and 5 deaths) and 50 in 2003 - 2005 (49 women with SAMM and 1 death). The prevalence of critically ill women due to abortion was 3.05/1 000 births in 1997 - 1998 compared with 2.76/1 000 births in 2003 - 2005. The difference was not statistically significant. The CFR due to abortions fell from 2.4/1 000 abortions in 1997 - 1998 and 0.25/1 000 abortions in 2003 - 2005 ($p = 0.01$, RR 0.1, 95% CI 0.01 - 0.89). Further, the MI declined from 21.7% in 1997 - 1998 to 2.0% in 2003 - 2005 ($p = 0.02$, RR 0.1, 95% CI 0.01 - 0.89).

The MMR of women dying due to complications of abortion was 63.6/100 000 births in 1997 - 1998 and 5.54/100 000 births in 2003 - 2005 ($p = 0.017$, RR 0.09, 95% CI 0.01 - 0.74) (Table I).

Discussion

There has been a more than 275% increase in TOPs performed at Kalafong Hospital from 1997 - 1998 to 2003 - 2005. This has coincided with a 31% decrease in the number of incomplete abortions being managed by the gynaecological emergency service. This amounts to seeing and treating about one emergency admission less per day. There has been a slight reduction in the proportion of abortions per total pregnancies.

In the west of Pretoria there have been approximately tenfold reductions in the MMR and CFR due to abortions since the Choice on Termination of Pregnancy (CTOP) act has been implemented. However, the proportion of critically ill patients with complications due to abortion has remained constant.

Table I. Comparison of the different disease classifications and rates of abortions, 1997 - 1998 and 2003 - 2005

	1997 - 1998	2003 - 2005	*p*, RR (95% CI)
Total births	7 858	18 064	-
Incomplete abortions Terminations of pregnancy	1 664 (80.2%) 406 (19.8%)	1 710 (42.8%) 2 289 (57.2%)	
Rate abortions per total pregnancies	20.7%	18.2%	$p = 0.03$; RR 0.87 (0.83 - 0.91)
Case fatality rate (/1 000 abortions)	2.4/1 000	0.25/1 000	$p = 0.03$; RR 0.1 (0.01 - 0.89)
Mortality index	21.7%	2.0%	$p = 0.02$; RR 0.1 (0.01 - 0.78)
Maternal mortality ratio (/100 000 births)	63.6	5.54	$p = 0.017$; RR 0.09 (0.01 - 0.74)
Critically ill prevalence (/1 000 births)	3.05	2.92	NS; RR 0.91 (0.55 - 1.47)
Severe morbidity rate	1.17%	1.25%	NS; RR 1.08 (0.66 - 1.75)

The reduction in mortality is gratifying. The 1994 survey of abortions predicted a MMR of 37/100 000 births.[1] The original MMR in this study was similar, and the reduction consistent with that suggested by the confidential enquiries into maternal deaths.[3,4]

The lack of reduction in the prevalence of critically ill women was surprising and disturbing. However, in the repeat national abortion survey of 2000[2] there was also no change in the proportion of women classified with high-severity incomplete abortions. Also the confidential enquiries into maternal deaths in the UK reported a lag phase in deaths due to the abortion after the introduction of their 1967 Abortion Act.[10] The reduction in the MI suggests that the reason for the reduction in deaths was due to the good care of the critically ill women with abortions. A strict protocol for managing women with abortions was introduced after the initial severe morbidity and mortality study.[11] The reduction in deaths may in part be due to the introduction of the strict protocol. Another explanation is that women with abortions were presenting earlier and the complications were detected earlier, making their management more successful.

The lack of reduction in the prevalence of severe morbidity also reflects that unsafe abortions are still being performed. Jewkes *et al*.[12] found that the main reason for not using legal services were not knowing the law, knowing the law but not knowing where to get an abortion done, anticipation of rudeness of staff, and being afraid of being found out. Surprisingly, being too late in pregnancy or finding too long a waiting list were found to be factors in only 7% of women not using legal services. The willingness for women to self-medicate and visit traditional healers in these circumstances may influence the overall ability of the new legislation to reduce abortion mortality.[12] Mhlanga[13] reported that there are still barriers to accessing TOP services in many parts of the country; as a result women become frustrated by the delays and deliberate obstruction. Women might then access misoprostol to initiate abortion and present to the hospital with vaginal bleeding. There is still difficulty in providing second-trimester abortions in South Africa[13] because many women at this gestational age require admission, and the Choice on Termination of Pregnancy Act only allows doctors to perform the procedure.[13] Sule-Odu *et al*.[14] reported that 44% of complicated unsafe abortions occurred in the second trimester. In a descriptive epidemiological study, Bartlett *et al*.[15] found that the risk of dying from complications of abortion increases exponentially for each additional week of gestation. Compared with women whose abortions were performed in the first trimester, those whose abortions were performed in the second trimester were significantly more likely to die of abortion-related causes. The relative risk of abortion related mortality was 14.7 at 13 - 15 weeks, 29.5 at 16 - 20 weeks and 76.6 after 21 weeks.[15] Unfortunately there is limited access to second-trimester TOPs in the west of Pretoria, as in the rest of the country, owing to lack of resources and personnel. These patients may seek assistance elsewhere and present to the hospital with complications.

Jewkes *et al*.[16] also found that legalisation of abortion had an immediate positive impact on morbidity in younger women. It was not possible to confirm this in the current study because the maternal age and gestational age of women who had spontaneous abortions or SAMM due to abortion were not recorded. It was therefore not possible to determine whether the women who presented with complications of abortions were in the first or second trimester of pregnancy.

Conclusion

The introduction of the Choice on Termination of Pregnancy Act has been associated with a massive reduction in women presenting with incomplete abortions and a reduction in deaths due to abortions. The prevalence of critically ill women due to complications of abortion has not changed. Further reduction in morbidity and mortality could be achieved by increasing the number of services offering second-trimester abortions, and especially recruitment of health workers to offer these services. Barriers to entry and poor quality of service offered by health care workers will need to be addressed in order further to reduce the morbidity and mortality of unsafe abortions.

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