Induced Abortion and Risk of Later Premature Births

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ABSTRACT

At least 49 studies have demonstrated a statistically significant increase in premature births (PB) or low birth weight (LBW) risk in women with prior induced abortions (IAs). This paper will focus on the risk of early premature births (EPBs) (< 32 weeks gestation) and extremely early premature births (XPBs) (< 28 weeks gestation). Large studies have reported a doubling of EPB risk from two prior IAs. Women who had four or more IAs experienced, on average, nine times the risk of XPB, an increase of 800 percent.

These results suggest that women contemplating IA should be informed of this potential risk to subsequent pregnancies, and that physicians should be aware of the potential liability and possible need for intensified prenatal care.

Informed consent for an elective surgical procedure must generally cover long-term consequences and not just immediate risk. A woman considering an induced abortion (IA) should thus expect to be informed of potential effects on her fertility and the health of future infants, as well as her own future health. An elevated risk of bearing a child afflicted with a serious disability such as cerebral palsy might influence her decision, as well as future liability determinations by courts.

Low birth weight (LBW) and premature birth (PB) are the most important risk factors for infant mortality or later disabilities[1] as well as for lower cognitive abilities and greater behavioral problems[2] and thus contribute importantly to the liability exposure of obstetricians.

A literature review retrieved 49 studies that demonstrated at least 95 percent confidence in an increased risk of preterm birth (PB), or surrogates such as low birth weight or second-trimester spontaneous abortion, in association with previous induced abortions. A list of these studies, which probably does not comprise all such studies, is appended to this article. If these 49 statistically significant associations were the result of chance alone, as may happen in 5 of 100 tests, IA should be associated with a reduction in PBs, with P<.05, in an equivalent number of tests. Not one such instance has been found in the literature.

A MedLine search from 1966 to March, 2003, retrieved 8 studies that purportedly failed to show a significant increase in premature births after IA.[3-10] Most showed an increase that did not reach statistical significance because of the small sample size: fewer than 1,000 pregnancies following an IA. In one, an increased risk of PB in women who had had an IA was nonsignificant when controlled for parity.[3] These studies did not consider separately the risk of EPBs or XPBs, or the effect of multiple IAs, except one that showed a statistically significant increase of EPB, despite the statement in the abstract that "in the Netherlands there are no significant indications that spontaneous midtrimester abortions or premature deliveries are caused by a previous induced abortion."[6]

A 1986 review concluded that "more research is needed before it is clear whether multiple induced abortions carry an increased risk of adverse pregnancy outcomes."[11] The more recent, large studies discussed here help supply this lack.

Australian Study

A 1993 study in Victoria, Australia,[12] involved 121,305 total births and compared the risk of PB and XPB in women with various numbers of IAs, compared with a control group of women who had no prior pregnancies (see Table 1, derived from data in this report).

	Number of prior IAs		
	1	2	3 or more
Gestational age	RR	RR	RR
20-27 weeks (XPBs)	1.6	2.5	5.6
28-31 weeks	1.6	1.1	2.6
32-36 weeks	1.1	1.6	2.4

[RR = relative risk]

Table 1: Premature birth risk by number of prior induced abortions (IAs) compared with outcome of first pregnancies, Victoria, 1986-1990[12]

As Lumley explains:

> The associations are different in the three gestation categories (20-27, 28-31, and 32-36 weeks), being particularly striking for births before 28 weeks. In this category, there is also evidence for a dose-response relationship between number of prior lost pregnancies and the prevalence of preterm birth: relative risks of 1.66 and 1.55 for one spontaneous or induced abortion, of 2.94 and 2.46 for two, and of 5.89 and 5.58 for three or more. These last four relative risks are substantially greater than any of those associated with maternal age, marital status, parity or socioeconomic status: that is, the association is most unlikely to be explained by confounding factors of a sociodemographic kind.[12]

Lumley's argument that "small single possible confounders cannot explain big risk factors such as 2.46 and 5.58" would also apply to any attempt to pose smoking or drug abuse as an explanation for the entire abortion-premature birth association.

The great majority of the Australian IAs were via vacuum aspiration; thus the PB risk cannot be attributed to dilation & curettage IAs.

The author noted that cross-sectional studies show that the relative risk of preterm delivery increases with the number of the previous preterm births, but that the risk of subsequent preterm births diminishes with each full-term delivery.[12] Thus, IA removes the protective potential of a full-term delivery, as others have also observed.[13]

In 1998, with twice the number of births (243,679) to analyze as in 1993,[14] Lumley validated her 1993 results and additionally showed that women with four or more prior IAs had an XPB risk nine times that of primigravidas.

German Study

Another large study of 106,345 births in Bavaria,[15] including 85 percent of births in the state and 1,146 EPBs, showed a comparable dose-response curve (see Table 2, extracted from Table 2 in the Bavarian study), confirming the Australian finding of the greatest increased risk for the earliest premature infants.

In a multivariate analysis that included many of the possible confounding variables, including previous stillborns, infertility treatment, age under 18 or over 35 years, malpresentation, premature rupture of membranes, and preeclampsia, the effect of even a single IA remained significant.

	Number of prior IAs		
	1	2	3 or more
Gestational age	OR (95% CI)	OR (95% CI)	OR (95% CI)
<32 weeks	2.5 (1.96-3.27)	5.2 (3.28-8.34)	8.0 (3.89-16.6)
<37 weeks	1.5 (1.35-1.76)	2.1 (1.54-2.81)	3.6 (2.25-5.62)

Table 2: Odds ratio (OR) for premature births by number of prior induced abortions (IAs)[15]

Danish Study

A 1999 study of Danish women[16] is especially important because it used an IA registry, thus eliminating recall bias, the hypothesis that women with prior IAs who deliver prematurely are more accurate in reporting reproductive history than women who deliver at full term, as a possible explanation for the results.

This study of 61,753 women found an odds ratio for preterm birth at <34 weeks gestation of 1.99 (95% CI 1.64-2.43) for one prior IA and 2.03 (95% CI 1.36-3.04) for two or more prior IAs. Vacuum aspiration (VA) was the method used in 92.3 percent of all abortions. For VA, PB (gestation <37 weeks) odds ratios for 1, 2, 3 or more IAs were: 1.82, 2.45, and 2.00, respectively.

Dilation and evacuation increased the risk substantially. One evacuation was associated with a PB odds ratio of 2.27 whereas two prior evacuations had a very large odds ratio of 12.55.

Mechanisms for Abortions Causing a Premature Birth Risk

An accepted risk of surgical IA is incompetent cervix, which is a PB risk factor.[17] Nulliparous women who have multiple IAs boost their odds of being over age 35 at their first term delivery, a risk factor for PB.[14,15] Additional risk factors for PB that may be increased by abortion include uterine adhesions,[14,23] infection,[17-19] and mental distress.[17]

The evidence meets four of the criteria for determining causality:[14] (1) the abortions preceded the premature births; (2) the association is strong; (3) there is a dose-response relationship; and (4) the association is plausible. A criterion for causality that could not be met in 1998 was confirmation by a prospective study. However, the Danish study identified all subsequent pregnancies until 1994 of the women under study, whose first pregnancies occurred in 1980, 1981, and 1982.[16] Reversibility of the exposure is not applicable to this circumstance. Consistency of findings with earlier studies cannot be assessed because these were not stratified by length of gestation, number of prior pregnancies, and number of IAs.[14] However, the large studies in Germany, Denmark, and Australia consistently support multiple prior IAs as boosting EPB risk.[14-16] Only the Australian studies included an XPB category.[12,14]

Liability and Informed Consent

Recent litigation by women who claim that they were not fully informed about all the risks of an elective abortion, especially a possible increased lifetime risk of breast cancer, has drawn attention to the process of obtaining informed consent for this procedure. Moreover, even a signed consent form does not suffice to relieve a physician in the U.S. or Canada of the responsibility to withhold a treatment that he knows, or ought to know, is medically contraindicated.[20] What level of risk will courts determine to constitute a medical contraindication?

Liability costs are especially high in cases involving damaged babies. The median damage award in cases of medical negligence in attending at childbirth was $2,050,000 between 1994 and 2000.[21]

Women are warned in a classic book covering 50 risk factors for PB that "if you have had one or more induced abortions, your risk of prematurity with this pregnancy increases by about 30 percent."[22] As shown here, the risk could be substantially higher than that, depending on the number of abortions and the method used.

It has been claimed that "induced abortion...is directly responsible for many thousands of cases of cerebral palsy–in North America alone–that otherwise would not have occurred."[23] Supporting this assertion is the fact that the cerebral palsy risk in XPB is about 38 times higher than in the overall population of newborns,[1] in which the risk of cerebral palsy is approximately 2-3 per 1,000 births.[24] As the liability costs for cerebral palsy are exceptionally high, induced abortion, particularly without very detailed informed consent, may carry an unsupportable legal liability. Courts may not require definitive proof of causation; the existence of a number of positive studies, in the absence of definitive refutation, may be sufficient reason to include discussion of a potential serious adverse effect in obtaining informed consent.

A consent form that simply lists such items as "incompetent cervix" or "infection" as potential complications, but does not inform women of the elevated future risk of a preterm delivery, and that the latter constitutes a risk factor for devastating complications such as cerebral palsy, may not satisfy courts.

The authors of a recent CME review survey article, which evaluated 24 studies of abortion and PB, strongly affirmed the need for informed consent. They stated that prior IAs boost the risk of PB and that 7 of 12 significant studies that they reviewed identified a dose-response effect, with risks increasing with the number of IAs.[25]

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APPENDIX: Studies that showed a statistically significant increase in preterm birth after induced abortion

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Medical Controversy

"Since among practitioners there will prove to be so much difference of opinion about acute diseases that the remedies which one physician gives in the belief that they are the best are considered by a second to be bad, laymen are likely to object to such that their art resembles divination; for diviners too think that the same bird, which they hold to be a happy omen on the left, is an unlucky one when on the right, while other diviners maintain the opposite."

Hippocrates Regimen in Acute Diseases

[Fortunately AAPS can discern right from left, and open debate is welcome.]

– Lawrence R. Huntoon, M.D., Ph.D.