AMERICAN JOURNAL OF
Public Health

September 1988

Volume 78, Number 9

Effects of Postconception Spermicide Use

Dismissal of suggestive epidemiological evidence relating a substance to a health impact might be justified if the observed association is weak or of little academic interest, if the substance is uncommonly used or the health impact associated with it is medically insignificant. None of these conditions appears to be satisfied in the Strobino, *et al,* report on *Spermicide Use and Pregnancy Outcome*.[1] Decreased birthweight was statistically significant among infant girls but not boys born to women who had used spermicides around the time of conception. This effect, apparently dose-related, was considered but dismissed as being a probable chance finding because of its magnitude, the biological implausibility of its sex-specificity, and its non-association with expected corollary effects: "an increase in the frequency of female fetal losses, resulting in an increase in chromosomally normal spontaneous abortions or an increase in the proportion of male births at term."

The health impact—low birthweight—is significant because it represents an important mortality risk factor operating early in the life cycle. Spermicides are commonly used and, compared with some other forms of contraception, they frequently fail, resulting in the generation of large populations of infants born to women who had used them around the time of conception. That statistical detection occurred in a study population of only 149 periconceptional spermicide users suggests that the association may be quitestrong. The question of whether or not it is also causal is, therefore, of importance, even apart from the academic interest. Finally, a relatively high proportion of voluntary abortions presumably involve fetuses of women practicing birth control, especially by less effective means such as spermicide application.

The female-specific low birthweight association as the authors note, was reported earlier.[2] In their own study, the authors note that an increase in the proportion of male births at term was observed among women using spermicides for at least one month after conception. They dismiss the possible significance of this corollary effect, however, because "confidence limits were wide" and "it seems unlikely that in-utero spermicide exposure could adversely affect only female conceptions." In-utero spermicide exposure might predominately affect female conceptions by selectively killing male-producing sperms, which may be more susceptible to spermicides because of their somewhat smaller size. This would leave a higher proportion of living-but-compromised female-producing sperms and, eventually, zygotes. The excess of male births is more difficult (but not impossible) to explain in the context of a causal association between periconceptional spermicide use and female low birthweight. The point is that further examination of the association seems justified, considering the prevalence of the chemical exposure and importance of the possible health impact, despite the authors' suggestion that it is a chance finding.

pages 1242-3

REFERENCES

1. Strobino B, Kline J, Warburton D: Spermicide use and pregnancy outcome. Am J Public Health 1988;78:260–264.
2. Polednak AP, Janerich DT, Glebatis DM: Birthweight and birth defects in relation to maternal spermicide use. Teratology 1982;26: 27–38.

Robert A. Michaels, PhD
President, Toxicology & Risk Assessment Consulting, RAM TRAC Corp., 21–41 34th Avenue, Suite 11C, Long Island City, NY 11106