

# IUDs and Ectopic Pregnancy

## To the Editor:

The review of Xu Xiong, Pierre Buekens and Elisabeth Wollast<sup>1</sup> on IUD use and the risk of ectopic pregnancy is an interesting attempt to analyze disparate material covering a wide time span and global data. The two conclusions that 1) with an odds ratio of 1.06 "Current IUD use did not enhance the risk of ectopic pregnancy" among non-pregnant women and 2) with an odds ratio of 1.40 "Past IUD use could slightly increase the risk of ectopic pregnancy" (p. 32) are, however, both without firm referents. If as stated on p. 31 "There were, however, no statistically significant differences found in the risk of ectopic pregnancy between different types of IUDs" in two reviews,<sup>2,3</sup> the quoted odds ratios would, nevertheless, vary over time and by place. Each odds ratio would depend on the proportion of non-pregnant women who use contraception, and the type of contraceptive used. The smaller the proportion of sexually active women of reproductive age using contraception, the higher the risk of ectopic pregnancy in that referent group. This is because the non-contracepting group has no protection against ectopic pregnancy. Further, generally, the more effective the methods used in protecting against pregnancy, the lower the risk of ectopic pregnancy, as indicated by Vessey in 1976<sup>4</sup> and by Franks et al.<sup>5</sup>

But reviews have clearly discerned statistically significant differences in the rate of ectopic pregnancy in different IUDs. In a review quoted elsewhere by Xu et al., Sivin<sup>6</sup> found IUDs with copper surface areas of 350–380 square mm to have significantly lower ectopic pregnancy rates than IUDs with only 200 square mm of copper. The difference between the review which did not find a clear difference<sup>3</sup> and that which did was 7 years, during which time published information on ectopic pregnancy rates for the Copper T380 devices increased from 1,900 woman years to 13,100 years of use in randomized trials and that of Multiload 375 increased from 637 to 2,500 years. A still later review by Sivin<sup>7</sup> with increased number of woman years in randomized trials demonstrated a statistically significant difference in ectopic pregnancy rates between copper IUDs with surface areas of 200 square mm and copper IUDs with larger copper surface areas.

Most IUDs protect women against ectopic pregnancy considering the population of non-contraceptors, both pregnant and non-pregnant as the ref-

erence group. Some contraceptive methods provide better protection than do many IUDs. The Copper T380 and other devices with large copper surface areas and a levonorgestrel IUD releasing a rated 20 µg/d, on the other hand, appear to provide protection against ectopic pregnancy that is comparable to the protection given by the most protective methods.

## References

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## Response

We appreciate the comments on our article.<sup>1</sup> Because ectopic pregnancies are rare events, case-control studies represent the vast majority of published studies on IUDs and ectopic pregnancies. The meta-analysis we performed summarizes these case-control studies.

We discussed in our article the crucial role of the choice of controls, and its effect on the heterogeneity of the published odds-ratios (ORs). An example of bias is that non-pregnant control women might be more likely to use IUDs than cases, which would suggest a protective effect of IUDs. We acknowledged that the end result of our meta-analysis is an average of rather