Assisted Reproductive Technology and the Incidence of Ovarian Cancer: A Meta-Analysis

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OBJECTIVE: To systematically evaluate the available literature regarding the relationship between assisted reproductive technology and ovarian cancer.

DATA SOURCES: Computerized search of 6 databases from 1966 (or closest) to present: Cochrane Controlled Trials Register, Cancerlit, CINHAL, Current Contents, PubMed in process (formerly called PreMEDLINE), and MEDLINE. We collected references from the bibliographies of reviews, original research articles, content experts, and conference proceedings to find published and unpublished literature.

METHODS OF STUDY SELECTION: Case-control and cohort studies are included. The population of interest is treated infertile women, the control population is untreated infertile women, and the intervention or exposure of interest includes the following fertility medications: clomiphene citrate, gonadotropins, human chorionic gonadotropin, and gonadotropin releasing hormone agonists. The primary outcome is incident, primary ovarian cancer. Three cohort and 7 case-control studies were included in the quantitative analyses.

TABULATION, INTEGRATION, AND RESULTS: The Newcastle-Ottawa Quality Assessment Scales were used. Two investigators independently extracted study methods, sources of bias, and outcomes. The following information was recorded: publication information, subject characteristics, intervention information and outcomes. Studies combined were sufficiently homogeneous for quantitative summary. Case-control and cohort data showed a significantly elevated risk for exposure of infertility medications and ovarian cancer in subjects who underwent assisted reproductive technology compared with general population controls (1.52; 95% confidence interval [CI] 1.18 to 1.97). When cases of ovarian cancer were compared with infertile controls for exposure to infertility medications, the odds ratio (0.99; 95% CI 0.67, 1.45) was not elevated. However, cohort data comparing outcome in treated infertile patients with untreated infertile patients suggests that treated patients may tend to a lower incidence of ovarian cancer—odds ratio = 0.67 (95% CI 0.32, 1.41).

CONCLUSION: Ovarian cancer does not appear to be increased in treated infertile patients versus untreated infertile patients. Treated infertile patients may have a lower incidence of ovarian cancer than untreated infertile patients. (Obstet Gynecol 2004;103:785–94. © 2004 by The American College of Obstetricians and Gynecologists.)

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