IVF and Other Reproductive Technologies Do Not Boost Ovarian Cancer Risk

But not bearing children appears to do so.

November 23, 2020 By Caroline Tien

Ever since the introduction of assisted reproductive technology (ART) in the 1980s, medical concerns that it might increase the risk for ovarian cancer have lingered.

ART refers to a wide array of treatments and procedures designed to facilitate pregnancy and childbirth, including embryo cryopreservation, intracytoplasmic sperm injection and in vitro fertilization (IVF).

Now a new study, conducted in the Netherlands and published in the journal of the National Cancer Institute, provides reassurance that these fertility technologies do not increase individual risk for ovarian cancer.

However, nulliparity, or not bearing children, does appear to increase risk.

Since it first became available, medical experts have raised concerns that ART might increase ovarian cancer risk by elevating levels of the sex hormone gonadotropin or by puncturing the ovarium epithelium, the soft tissue surrounding the ovaries.

Despite these concerns, ART has become more popular in the four intervening decades. In 2016, 1.8% of all babies born in the United States were conceived with the help of fertility treatments, according to the Centers for Disease Control and Prevention. As the number of women turning to ART to start families increases, the researchers wrote in the study, it is more important than ever to identify and quantify any associated risks. Previous epidemiological studies have yielded conflicting results.

The researchers cross-compared a database of women who had received reproductive assistance and two national cancer registries, the Netherlands Cancer Registry and the Dutch Pathology Registry. In total, they reviewed the medical histories of 30,625 women who had undergone ovarian stimulation—the second stage of IVF—between 1983 and 2001 as well as those of 9,988

women who had not undergone ovarian stimulation during the same time period despite being infertile.

Over an average of 24 years, 158 of the women had developed invasive (cancerous) ovarian tumors, and 100 had developed borderline (noncancerous) ovarian tumors. As it turned out, both study populations—women who had received reproductive assistance for infertility and women who had not—were at higher risk for ovarian cancer than women in the general population. But women who had received reproductive assistance for infertility were not at higher risk for ovarian cancer than women who had not received reproductive assistance for infertility.

According to the researchers, nulliparous women had a statistically significant twofold increased risk of ovarian cancer, whereas parous women (women who have borne children) had no increased risk compared with the general population. This suggests that the root cause of the increase in risk was not reproductive assistance but childlessness itself. Not having children is a well-known risk factor for several cancers, including breast, endometrial and ovarian.

“Reassuringly, women who received ovarian stimulation for assisted reproductive technology do not have an increased risk of malignant ovarian cancer, not even in the long run,” said the study’s lead author, Flora E. van Leeuwen, PhD, in a press release.

While relatively rare, ovarian cancer kills 14,100 women in the United States annually. It owes much of its lethality to the fact that it is often asymptomatic in the early stages.

To read all about ovarian cancer, click here. To read more about ovarian cancer risk factors, click here, click here and click here.
