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Link between breast cancer and contraceptive pills

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Date of submission: 13\4\2017

Abstract :

A lot of intimidating headlines have recently declared that taking hormonal birth control raises your risk of breast cancer. Some cited a specific number—38 percent—while others left it as a vague threat. Given that about a quarter of all women in the U.S. use some kind of hormonal birth control, this sounds like a huge public health issue. The very slight increased risk of breast cancer is actually something we've known about for a long time. We also know that hormonal contraception can protect you against other types of cancer, and that there are lifestyle factors that can play an equally large (if not larger) role in determining your breast cancer risk. And for plenty of women, hormones are still the right choice.

Introduction :

usually breast cancer either begins in the cells of the lobules, which are the milk-producing glands, or the ducts, the passages that drain milk from the lobules to the nipple. Less commonly, breast cancer can begin in the stromal tissues, which include the fatty and fibrous connective tissues of the breast. Over time, cancer cells can invade nearby healthy breast tissue and make their way into the underarm lymph nodes, small organs that filter out foreign substances in the body. If cancer cells get into the lymph nodes, they then have a pathway into other parts of the body. The breast cancer's stage refers to how far the cancer cells have spread beyond the original tumor (see the Stages of breast cancer table for more information). Breast cancer is always caused by a genetic abnormality (a "mistake" in the genetic material). However, only 5-10% of cancers are due to an abnormality inherited from your mother or father. Instead, 85-90% of breast cancers are due to genetic abnormalities that happen as a result of the aging process and the "wear and tear" of life in general. There are steps every person can take to help the body stay as healthy as possible, such as eating a balanced diet, maintaining a healthy weight, not smoking, limiting alcohol, and exercising regularly (learn what you can do to manage breast cancer risk factors). While these may have some impact on your risk of getting breast cancer, they cannot eliminate the risk. Developing breast cancer is not your or anyone's fault. Feeling guilty, or telling yourself that breast cancer happened because of something you or anyone else did, is not productive.

Oral contraceptives (birth control pills) are hormone-containing medications that are taken by mouth to prevent pregnancy. They prevent pregnancy by inhibiting ovulation and also by preventing sperm from penetrating through the cervix. By far the most commonly prescribed type of oral contraceptive in the United States contains synthetic versions of the natural female hormones estrogen and progesterone. This type of birth control pill is often called a combined oral contraceptive. Another type of oral contraceptive, sometimes called the mini pill, contains only progestin, which is a man-made version of progesterone. Nearly all the research on the link between oral contraceptives and cancer risk comes from observational studies, both large prospective cohort studies and population-based case-control studies. Data from observational studies cannot definitively establish that an exposure—in this case, oral contraceptives—causes (or prevents) cancer. That is because women who take oral contraceptives may differ from those who don't take them in ways other than their oral contraceptive use, and it is possible that these other differences—rather than oral contraceptive use—are what explains their different cancer risk.

Discussion :**Research 1 :**

An analysis of data from more than 150,000 women who participated in 54 epidemiologic studies showed that, overall, women who had ever used oral contraceptives had a slight (7%) increase in the relative risk of breast cancer compared with women who had never used oral contraceptives. Women who were currently using oral contraceptives had a 24% increase in risk that did not increase with the duration of use. Risk declined after use of oral contraceptives stopped, and no risk increase was evident by 10 years after use had stopped (4).

A 2010 analysis of data from the Nurses' Health Study, which has been following more than 116,000 female nurses who were 24 to 43 years old when they enrolled in the study in 1989, also found that participants who used oral contraceptives had a slight increase in breast cancer risk. However, nearly all of the increased risk was seen among women who took a specific type of oral contraceptive, a "triphasic" pill, in which the dose of hormones is changed in

three stages over the course of a woman's monthly cycle. An elevated risk associated with specific triphasic formulations was also reported in a nested case-control study that used electronic medical records to verify oral contraceptive use. In 2017, a large prospective Danish study reported breast cancer risks associated with more recent formulations of oral contraceptives. Overall, women who were using or had recently stopped using oral combined hormone contraceptives had a modest (about 20%) increase in the relative risk of breast cancer compared with women who had never used oral contraceptives. The risk increase varied from 0% to 60%, depending on the specific type of oral combined hormone contraceptive. The risk of breast cancer also increased the longer oral contraceptives were used.

Research 2 :

We assessed associations between the use of hormonal contraception and the risk of invasive breast cancer in a nationwide prospective cohort study involving all women in Denmark between 15 and 49 years of age who had not had cancer or venous thromboembolism and who had not received treatment for infertility. Nationwide registries provided individually updated information about the use of hormonal contraception, breast-cancer diagnoses, and potential confounders. The result show that Among 1.8 million women who were followed on average for 10.9 years (a total of 19.6 million person-years), 11,517 cases of breast cancer occurred. As compared with women who had never used hormonal contraception, the relative risk of breast cancer among all current and recent users of hormonal contraception was 1.20 (95% confidence interval [CI], 1.14 to 1.26). This risk increased from 1.09 (95% CI, 0.96 to 1.23) with less than 1 year of use to 1.38 (95% CI, 1.26 to 1.51) with more than 10 years of use (P=0.002). After discontinuation of hormonal contraception, the risk of breast cancer was still higher among the women who had used hormonal contraceptives for 5 years or more than among women who had not used hormonal contraceptives. Risk estimates associated with current or recent use of various oral combination (estrogen-progestin) contraceptives varied between 1.0 and 1.6. Women who currently or recently used the progestin-only intrauterine system also had a higher risk of breast cancer than women who had never used hormonal contraceptives (relative risk, 1.21; 95% CI, 1.11 to 1.33). The overall absolute increase in breast cancers diagnosed among current and recent users of any hormonal contraceptive was 13 (95% CI, 10 to 16) per 100,000 person-years, or approximately 1 extra breast cancer for every 7690 women using hormonal contraception for 1 year

Conclusion :

Naturally occurring estrogen and progesterone stimulate the development and growth of some cancers (e.g., cancers that express receptors for these hormones, such as breast cancer). Because birth control pills contain synthetic versions of these female hormones, they could potentially also increase cancer risk but strengthen the connection between hormonal contraception and breast cancer risk, the increase in risk is small and for many individuals would be outweighed by the benefits.

Refernce :

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