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Hysterectomy and oophorectomy may increase risk of cardiovascular disease

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Abstract:

Hysterectomy for benign indications is one of the commonest surgical procedures in women, but the association between the procedure and cardiovascular disease (CVD) is not fully understood

Introduction:

A hysterectomy is a second most surgical procedure to remove a woman's uterus, if removes ovaries along with uterus it's called a hysterectomy with bilateral oophorectomy.

A hysterectomy is carried out to relieve symptoms or to prevent cancer.

These include:

1. Gynecologic cancers of the cervix, uterus, ovaries, or fallopian tubes
2. Precancerous gynecologic conditions
3. Uterine fibroids or benign uterine growths
4. Chronic pelvic pain
5. Heavy vaginal bleeding
6. Uterine prolapse: where the uterus drops from its location within the pelvis and sits in or out of the vagina
7. Endometriosis : in which uterine-like tissue grows in locations other than within the uterus, including the outside of the uterus, fallopian tubes, ovaries, pelvic ligaments, lining of the abdomen, bladder, vagina, rectum, bladder, intestines, appendix and or rectum, or, more rarely in the lungs
8. Adenomyosis: where the uterine tissue grows through the uterine wall instead of staying confined to the inner portion of the uterus⁴.

After the procedure of hysterectomy with bilateral oophorectomy in premenopausal, the body goes through what is known as **surgical menopause** and you may experience hot flashes or other menopause symptoms such as sweats or vaginal dryness, also increased risk of cardiovascular disease including heart attack, coronary heart disease and stroke —due to a sudden drop in the levels of the ovarian hormones estrogen and progesterone lead to symptoms are often more severe than with natural menopause⁵.

In postmenopausal women, removal of the ovaries with a hysterectomy does not significantly affect hormone levels as the ovaries have already become largely inactive.

The normal function of estrogen increase healthy HDL cholesterol, decrease unhealthy LDL and helps arteries stays flexible.

Myocardial infarction also called heart attack is the death of cardiac muscle due to prolonged severe ischemia that result from:

- 1-stiffer carotid arteries caused by decrease estrogen leads to the heart feels the pressure and has to work harder to pump blood to the body in a hysterectomy with bilateral oophorectomy. Which the normal function of estrogen is reduces vascular tone (dilates blood vessels).
- 2-Prior research has shown that removal of the uterus can disrupt blood flow to the ovaries, which leads to lower estrogen production⁶.

Discussion:

First study: According to the Centers for Disease Control and Prevention, heart disease and stroke were responsible for 28.2 percent of all deaths among women in 2013, the most recent year for which data is available. Risk increases with both natural and surgical menopause. A multi-ethnic study published in the October 2012 issue of the journal "Menopause" concluded that women who reported experiencing menopause before age 46 -- including menopause as a result of removal of the ovaries -- had a moderately higher risk of coronary heart disease and stroke. This held true even after adjusting for other cardiovascular disease risk factors¹

Second study: determine the risk of developing a first myocardial infarction after a hysterectomy and/or oophorectomy. Case-cohort analysis performed among 17,126 women in the Uppsala Health Care Region of Sweden, who had undergone a hysterectomy and/or oophorectomy in 1965 to 1983. Record linkage was used for follow-up and medical records to ascertain the actual history of oophorectomy. Overall, 214 cases of myocardial infarction were observed. In premenopausal women a bilateral oophorectomy alone tended to increase the relative risk 1.6; 95% CI 0.8-3.1, but this operation combined with hysterectomy increased the risk only among those aged 50 and over at surgery. Hysterectomy at premenopausal age or unilateral oophorectomy did not alter the risk of myocardial infarction. In naturally menopausal women, hysterectomy-mainly for uterine myoma-was associated with a four-fold increase in relative risk (3.8; 95% CI 1.9-7.8). Hysterectomy for treatment of myoma performed after a natural menopause is linked to an excess risk for myocardial infarction. Bilateral oophorectomy before menopause may increase the risk of myocardial infarction.²

Third study: a total of 7605 women who underwent hysterectomy without oophorectomy from 1997 to 2009 were identified, the control group consist 30,420 women without hysterectomy selected by matching age, hypertension, diabetes, dyslipidemia the comment date follow up results 558 strokes and 599 CHD develop during median 7 years follow up which the different was not significant between women with or without hysterectomy for stroke (2.34 vs. 2.08 per 1000 person- year) and CHD (2.39 vs. 2.26) .

Fourth study: The work looked at 113,679 cases of women aged 35-45 during the period April 2004 to March 2014. A third of the patients studied had both ovaries removed. Titled Removal of all ovarian tissue versus conserving ovarian tissue at time of hysterectomy in premenopausal patients with benign disease: study using routine data and data linkage the study has been published in the BMJ.

It found that women who had one or no ovaries removed were less likely to develop ischaemic heart disease (coronary artery disease) or cancer after hysterectomy than those who had both (bilateral) ovaries removed³.

Conclusion:

Hysterectomy in women aged 50 or younger substantially increase the risk for **CVD** and oophorectomy further add to the risk of both coronary heart disease and stroke while in women more than 50 years (post menopause) is low risk for **CVD**.

References:

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