BIRTH CONTROL PILLS: RISKS AND BENEFITS

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It has been almost 20 years since the pill was approved by the FDA for use in the United States. It is estimated that about 10 million women are using the birth control pill in this country. Physicians and women became concerned when the early reports dealing with the cardiovascular complications were published. Recently, the continued research sponsored by NIH, Walnut Creek, and Boston Collaborative Study, has clarified many of the issues surrounding the question of safety of the pill.

There are various formulations of the birth control pill. The most common and most widely used is the combination type. In this type, each tablet contains an estrogen and a progestin. The estrogen is either ethinyl estradiol or mestranol. The latter has abolished to a major extent. The combination type leads to suppression of ovulation as the main action. This is due to suppression of mid cycle LH and FSH peaks as a result of the effect of both estrogen and progestin component on the hypothalamic pituitary axis. The mini pill leads to suppression of ovulation only in 25 percent of women users. In addition, due to the dominant progestin nature of the pill, the endometrium shows atrophy of the glands and thus, becomes unsuitable for implantation. Moreover, the cervical mucus becomes thickened and less permeable to the sperm.

MODE OF ACTION:

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BIOLOGIC EFFECTS:

1. Carbohydrate metabolism: Studies have shown that the combination type pill leads to some deterioration in the glucose tolerance when the estrogen dose is 50 mcg or more.1 The fasting blood sugar levels might not change, but there is an increase in the levels above normal during the two hour glucose tolerance test. This is also associated with an increase in serum insulin levels above the normal control levels. The effect on carbohydrate metabolism is not only due to estrogen fraction, but also due to the progestin component. Studies using progestins only have shown abnormalities in carbohydrate metabolism.2 When low dose formulations are used with estrogens less than 50 mcg, the studies have shown no change in glucose tolerance and in some borderline diabetic patients an improvement was reported.3 It is suggested that the pill should not be used in diabetic patients since their carbohydrate metabolism would deteriorate and control of their blood sugar levels might be somewhat difficult.

2. Lipid metabolism: There is an inverse relation between atherosclerosis and high density lipoproteins. There is also a positive correlation between concentration of low density lipoproteins and incidence of cardiovascular problems. Lipoproteins carry cholesterol and triglycerides in the circulation. Low density lipoproteins carry cholesterol to the peripheral tissues and enhance the formulation of atherosclerosis. On the other hand, high density lipoproteins carry cholesterol to the liver to be excreted, hence the protective function of high density lipoproteins against cardiovascular problems. During reproductive years cardiovascular and cerebrovascular accidents in women are significantly less

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that dysplasia might show progress if the pill use extends to over seven years of use. It is therefore essential to follow pill users with pap smears on a regular basis. Any dysplasia has to be corrected to avoid any possibility of further progress of such lesions.

C. Breast tumors: The use of birth control pills reduces the risk of development of benign breast lesions in women users. As such, they reduce the premalignant lesions and thus, reducing incidence of malignancy in these patients. So far there is no relation between estrogen use and breast malignancies. However, it is recommended that birth control pills should not be used in patients with a history of estrogen dependent malignant tumors.

D. Liver tumors: The incidence of liver adenomas is extremely low in pill users. However, physicians must be aware of the problem and a liver examination is to be done during the checkup or if the patient complains of pain over the liver region. If there is liver enlargement, a scan must be done to diagnose the condition. These tumors are benign and regress when the pill use is discontinued.

E. Pituitary tumors: So far all the studies did not document any relation between prior pill use and the occurrence of pituitary tumors.

6. Effect on subsequent fertility: Recent studies show that fertility is not affected after the pill use has been discontinued. There is no increase in fetal wastage, fetal growth, ectopic pregnancy, or fetal anomalies.

Finally, maternal mortality for pill users have been shown to be 2−6 per 100,000 women which is significantly less than that for childbirth (20 per 100,000) in the United States. Thus, use of oral contraceptive pills is beneficial in reducing maternal mortality especially in developing and underdeveloped countries where the maternal mortality varies from 250 to 1,000 per 100,000 women.

In conclusion, the data presented suggest that the benefits outweigh the risks of pill use especially so, when the low dose formulations are used.

References


