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What is the risk of adverse outcomes in a woman who develops mild hypertension from OCs?

EVIDENCE-BASED ANSWER

Women who take oral contraceptives (OCs) have an increased risk of developing new hypertension, which returns to baseline within 1 to 3 months of OC cessation (strength of recommendation [SOR]: **A**, based on cohort studies).

Among large populations of women with hypertension from all causes, risk of

adverse cardiovascular outcomes is increased (SOR: **B**, based on Framingham data). Women with pre-existing hypertension who take OCs have an increased risk of stroke and myocardial infarction (MI) when compared with hypertensive women who do not (SOR: **B**, based on case-control studies).

CLINICAL COMMENTARY

Is an increase of 178 per million woman-years of CV events clinically significant?

In clinical practice, we continually balance the risks and benefits of any treatment. Oral contraceptive pills are the most commonly used reversible form of contraception in the United States. Although this review documents an increased risk of reversible new hypertension for women on OCs and a possibly significant increase in

cardiovascular events, the clinical meaning of these data is unclear. Is an increase of 178 per million woman-years of CV events clinically significant? It would be a shame to limit the availability of this effective contraception method to otherwise young and healthy women because of this very rare event.

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Evidence summary

No studies specifically examine the risk of adverse outcomes for women who have mild elevations in blood pressure as a result of taking OCs. However, for the general population cardiovascular risk increases 30% for each 10 mm Hg rise in systolic pressure.¹

A prospective cohort study found an increased incidence of new hypertension

developing among women taking OCs. The study, conducted in the US, included 68,297 female nurses aged 25 to 42 years without a previous diagnosis of hypertension, diabetes, coronary heart disease, stroke, or cancer, who were followed for 4 years. Women were excluded from the study if they had not had a physical exam in the last 2 years or were taking antihypertensive medication at study inception. The

FAST TRACK

Although there is a risk of reversible new hypertension for women on OCs, the clinical meaning of these data is unclear

nurses self-reported their blood pressure readings via questionnaire; medical records were sampled to validate the accuracy of self-reports. After adjusting for risk factors, current oral contraceptive use increased the risk of developing hypertension (relative risk [RR]=1.8; 95% confidence interval [CI], 1.5–2.3; corresponding to 41.5 new cases of hypertension per 10,000 person-years).²

A systematic review of 8 case control studies (with 4907 cases and 13,443 controls) found an increased risk of stroke and MI among hypertensive women taking combined type OCs vs those not taking OCs. Women with hypertension aged 20 to 24 years had an estimated CV event risk of 312 per million woman-years while taking OCs vs 134 per million woman-years not taking OCs. Among hypertensive women aged 40 to 44 years, the estimated risks were 1213 vs 529 per million woman-years, respectively. Primary endpoints varied across the studies and statistical significance was not given.³

Three studies showed that blood pressure elevations due to taking oral contraceptives returned to baseline with discontinuation of the medication. A prospective cohort study followed 13,358 women who were neither pregnant nor postpartum between the ages of 15 and 60. Women who either initiated or resumed using OCs experienced a statistically significant rise of about 4 mm Hg in the systolic pressure and 1 mm Hg in the diastolic pressure. Women who stopped using OCs experienced significant decreases in both systolic and diastolic components (about 5 mm Hg and 1.5 mm Hg, respectively).¹

Similarly, a survey study of 461 women attending family planning clinics found that mean blood pressures were significantly higher for those taking OCs than for those using nonhormonal contraception. Elevated blood pressures correlated with duration of current use of OCs but returned to normal soon after stopping OCs. The mean pressures of those who had stopped OCs more than a month were similar to those of women who had never

taken an OC and significantly lower than those of women who were currently taking OCs.⁴

Finally, a prospective study which followed 32 women who had taken combined OCs for 1 to 3 years and then stopped found that blood pressures returned to pretreatment levels at 3 months. Systolic pressure fell by 9.7 mm Hg and diastolic by 2.9 mm Hg compared with measurements made 1 month before stopping. No cardiovascular complications were reported among women during this study.⁵

Recommendations from others

The American College of Obstetricians and Gynecologists says that women with well-controlled and monitored hypertension aged 35 years and younger are appropriate candidates for a trial of combination OCs, provided they are otherwise healthy, have no evidence of end-organ vascular disease, and do not smoke cigarettes.⁶ If blood pressure remains well controlled with careful monitoring several months after initiating OCs, use can be continued.

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