Clinical Practice Assessment

The Risk of Cardiovascular Disease in Women on Combination Oral Contraceptives with a history of Hypertension

Clinical Question:
What is the relative risk of cardiovascular disease in women on combination oral contraceptives with a history of hypertension compared with women on combination oral contraceptives without a history of hypertension?

Bottom Line:
Women on combination oral contraceptives with a history of hypertension have an increased risk of thrombotic stroke and myocardial infarction compared with women on combination oral contraceptives without a history of hypertension. These risks are similar to women with other known cardiovascular risk factors including smoking, diabetes and hyperlipidemia. While the overall incidence of cardiovascular events is low, risk factors, including advancing age, appear to be additive.

Synopsis:
The longest continuous cohort study following women on combination oral contraceptives (COC) was published in 2012 in the New England Journal of Medicine (1). Lidegaard, et al, followed Danish women aged 15 – 49 for 15 years from January 1995 through December 2009. They reported an increased risk of thrombotic stroke and myocardial infarction (MI) (2.32 and 2.17 respectively) in women on medication for hypertension while on COC compared with women on COC but not on antihypertensive meds. This experience was based on 1,343,081 person-years. This study also reported the relative risk of thrombotic stroke and MI for several other cardiovascular risk conditions (table 1).

Table 1

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Thrombotic Stroke</th>
<th>Myocardial Infarction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incidence per 1000 person-years</td>
<td>Relative Risk</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.5</td>
<td>2.73</td>
</tr>
<tr>
<td>Hypertension</td>
<td>0.8</td>
<td>2.32</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>2.2</td>
<td>2.11</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.7</td>
<td>1.57</td>
</tr>
<tr>
<td>Age &gt; 35</td>
<td>0.4</td>
<td>4.79</td>
</tr>
</tbody>
</table>
In women older than 35, the risk of thrombotic stroke and MI were significantly higher compared with younger women. However the actual incidence rates of thrombotic stroke and myocardial infarction were quite low in both age groups.

The absolute risk or either stroke or MI in women with hypertension on COC is also small. However risk factors appear to be additive, so the risk of cardiovascular events significantly increases in women on COC with hypertension who are over 35 years of age and smoke (2).

Both the World Health Organization and the Centers for Disease Control categorize COC use in women with hypertension as "theoretical or proven risks usually outweigh the advantages" (3, 4). The American College of Obstetricians and Gynecologists statement reads: "In women with well-controlled and monitored hypertension who are 35 years or younger, a trial of combination contraceptives may be appropriate as long as the patient is otherwise healthy, shows no signs of end-organ vascular disease, and does not smoke. If blood pressure remains well controlled several months after the trial is started, combination contraceptives may be continued" (5).

References:

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