Antihypertensive drug therapy for mild to moderate hypertension during pregnancy

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RHL summary

Key Findings

This updated review found:

- Antihypertensive drugs during pregnancy for mild to moderate hypertension reduce the risk of severe hypertensive episodes.
- There is no clear evidence of improved fetal outcomes associated with these therapies, nor is there reduction in the consequences of severe hypertension and risk of pre-eclampsia.
- The adverse effects of antihypertensive therapy during pregnancy are not clear.

Evidence included in this review

Forty-nine randomised trials with a total of 4,723 women were included. Trials evaluated any antihypertensive drug therapy for mild to moderate hypertension during pregnancy. Thirty-four trials were from industrialised countries, and fifteen from middle- or low-income countries. All trials were of small sample size and most of them were published before 2000.

Quality assessment

The included trials were of a moderate to poor quality. Only 12 trials were placebo-controlled, 10 of which were double-blinded. All trials comparing two or more drugs were open label.

Clinical implications

Antihypertensive drugs during pregnancy for mild to moderate hypertension reduce the risk of severe hypertension by a half. However, there is no clear effect observed on rates of pre-eclampsia, fetal or neonatal mortality or small-for-gestational age babies. It therefore remains unclear whether antihypertensive drugs for mild to moderate hypertension during pregnancy are worthwhile. Beta blockers and calcium channel blockers seem to be more effective in reducing the risk of severe hypertension than methyldopa.

Further research

Though an effect on the incidence of pre-eclampsia or fetal/neonatal death has not been observed in this review, it is possible that a small effect that remains clinically important does exist, and further research is required to investigate this. The clinical significance of reducing episodes of severe hypertension during
pregnancy also needs to be explored. Long-term outcomes for children of mothers treated with antihypertensives during pregnancy need to be explored.

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**Cochrane review**


**Abstract**

Mild to moderate hypertension during pregnancy is common. Antihypertensive drugs are often used in the belief that lowering blood pressure will prevent progression to more severe disease, and thereby improve the outcome.

To assess the effects of antihypertensive drug treatments for women with mild to moderate hypertension during pregnancy.

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (30 April 2013) and reference lists of retrieved studies.

All randomised trials evaluating any antihypertensive drug treatment for mild to moderate hypertension during pregnancy defined, whenever possible, as systolic blood pressure 140 to 169 mmHg and diastolic blood pressure 90 to 109 mmHg. Comparisons were of one or more antihypertensive drug(s) with placebo, with no antihypertensive drug, or with another antihypertensive drug, and where treatment was planned to continue for at least seven days.

Two review authors independently extracted data.

Forty-nine trials (4723 women) were included. Twenty-nine trials compared an antihypertensive drug with placebo/no antihypertensive drug (3350 women). There is a halving in the risk of developing severe hypertension associated with the use of antihypertensive drug(s) (20 trials, 2558 women; risk ratio (RR) 0.49; 95% confidence interval (CI) 0.40 to 0.60; risk difference (RD) -0.10 (-0.13 to -0.07); number needed to treat to harm (NNTH) 10 (8 to 13)) but little evidence of a difference in the risk of pre-eclampsia (23 trials, 2851 women; RR 0.93; 95% CI 0.80 to 1.08). Similarly, there is no clear effect on the risk of the baby dying (27 trials, 3230 women; RR 0.71; 95% CI 0.49 to 1.02), preterm birth (15 trials, 2141 women; RR 0.96; 95% CI 0.85 to 1.10), or small-for-gestational-age babies (20 trials, 2586 women; RR 0.97; 95% CI 0.80 to 1.17). There were no clear differences in any other outcomes.

Twenty-two trials (1723 women) compared one antihypertensive drug with another. Alternative drugs seem better than methyldopa for reducing the risk of severe hypertension (11 trials, 638 women; RR (random-effects) 0.54; 95% CI 0.30 to 0.95; RD -0.11 (-0.20 to -0.02); NNTH 7 (5 to 69)). There is also a reduction in the overall risk of developing proteinuria/pre-eclampsia when beta blockers and calcium channel blockers considered together are compared with methyldopa (11 trials, 997 women; RR 0.73; 95% CI 0.54 to 0.99). However, the effect on both severe hypertension and proteinuria is not seen in the individual drugs. Other outcomes were only reported by a small proportion of studies, and there were no clear differences.
It remains unclear whether antihypertensive drug therapy for mild to moderate hypertension during pregnancy is worthwhile.

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