Management of hypertensive disorders in pregnancy in Black women: a systematic review

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Research Article

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Abstract

Background: Black women are four times more likely to die than White women due to complications during pregnancy or childbirth in the U.K. This cohort are also more prone to Hypertensive Disorders in Pregnancy (HDP). Outside of pregnancy, there are race based differences in the management of hypertension as Calcium-Channel Blockers (CCB) are more effective in reducing blood pressure in Black patients. It is unclear whether these differences in anti-hypertensive management extend to the management of hypertension in pregnancy. The primary objective was to address this gap in evidence by undertaking a systematic review of all randomised control trials investigating pharmacological management of HDP to assess whether CCBs are the most effective anti-hypertensive agent in Black pregnant women. Methods: The following electronic databases were searched: PubMed, MEDLINE and Embase. We used MeSH and free text terms in conjunction to increase sensitivity to potentially relevant studies. Inclusion criteria included: (1) study involved treatment of HDP; (2) study was of a randomised control trial design; (3) one of the treatment arms involved CCBs and (4) English full-text. Information regarding baseline participant data, type of anti-hypertensive, and clinical outcomes was extracted from each study. Results: This review highlighted four randomised control trials, which published race or ethnicity demographics, with only one trial that stratified HDP outcomes by ethnicity. Conclusions: There is a lack of evidence to draw definite conclusions as to whether CCBs are the most effective anti-hypertensive agent for Black patients with HDP, highlighting the need for further research in this area. However, this review demonstrates some evidence to support the hypothesis that CCBs could be more effective in the management of HDP in Black patients and that Labetalol, which is the current first-line management of HDP, may not represent the gold standard of treatment in this cohort.

Full Text

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Figures

| First Author | Year | Sample size | Black Participants (%) | Type of anti-hypertensive | Primary outcome |
|--------------|------|-------------|-------------------------|---------------------------|-----------------|
| Scardo       | 1999 | 50          | 62                      | Nifedipine vs Labetalol   | Time to achieve blood pressure goal of <160 mm Hg systolic and <100 mm Hg diastolic |
| Belfort      | 2003 | 1650        | 42                      | Nimodipine vs Magnesium Sulphate | Development of eclampsia |
| Sharma       | 2016 | 50          | 36                      | Nifedipine vs Labetalol   | Time to blood pressure control |
| Webster      | 2017 | 112         | 54                      | Nifedipine vs Labetalol   | Blood pressure |

Figure 1
Study characteristics and primary outcomes

| Study          | D1 | D2 | D3 | D4 | D5 | D6 | D7 | Overall |
|---------------|----|----|----|----|----|----|----|---------|
| Scardo 1999   | +  | +  | +  | +  | +  | +  | -  | +       |
| Belfort 2003  | X  | X  | X  | +  | +  | -  | -  | X       |
| Sharma 2016   | +  | X  | X  | X  | +  | +  | -  | X       |
| Webster 2017  | X  | X  | X  | X  | +  | +  | -  | X       |

D1: Random sequence generation  
D2: Allocation concealment  
D3: Blinding of participants and personnel  
D4: Blinding of outcome assessment  
D5: Incomplete outcome data  
D6: Selective reporting  
D7: Other sources of bias

Judgement  
- High  
- Unclear  
- Low

Figure 2
Risk of bias assessment

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