

Ophthalmic artery Doppler in the complementary diagnosis of preeclampsia: a meta-analysis

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Objective

To evaluate the accuracy of different parameters of the ophthalmic artery Doppler (OAD) in the complementary diagnosis of preeclampsia (PE).

Methods

This meta-analysis adhered to the PRISMA guidelines. To investigate the mean difference in OAD values, peak systolic velocity (PSV), end-diastolic velocity (EDV), second systolic velocity peak (P2), resistance index (RI), pulsatility index (PI), and peak ratio (PR), between PE cases (overall and according to severity) and controls, random-effects meta-analyses were conducted for each Doppler parameter, with overall PE and mild and severe PE subgroups. Diagnostic performance and heterogeneity were evaluated with summary receiver operating characteristic (sROC) curves and 95% confidence intervals obtained with bivariate models.

Results

Eight studies stratified the results into mild and severe or late and early PE, involving 1,425 pregnant women. PR and P2 had better diagnostic performance than the other indexes, with the PR of AUsROC at 0.885, the sensitivity of 84%, and specificity of 92%, with a low false-positive rate of 0.08 and the P2 with AUsROC of 0.926, the sensitivity of 85% and specificity of 88%. RI, PI, and EDV showed good performance and consistency across studies but lower AUsROC values of 0.833, 0.794, and 0.772, respectively.

Conclusion

Ophthalmic artery Doppler is a complementary tool with good performance for the diagnosis of overall and severe preeclampsia, with high and best sensitivity and specificity when using PR and P2 parameters.