

[EP16.84] Physiological evolution of maternal ophthalmic artery Doppler from pre-gestation to the third trimester

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Objective

To characterize the longitudinal physiological variation of ophthalmic artery Doppler indices from the pre-gestational stage and throughout gestation.

Methods

This is a prospective cohort study of uncomplicated pregnancies followed from pre-gestation to the third trimester. A total of 207 ophthalmic artery transorbital scans were performed: pre-gestation (n=18), first trimester (n=89), second trimester (n=63) and third trimester (n=37). In each scan, the first peak systolic velocity (PSV1), the second peak systolic velocity (PSV2), the PSV2/PSV1 ratio, and the pulsatility index (PI) were recorded bilaterally and mean values were calculated. Longitudinal changes across pregnancy were analyzed using linear mixed-effects regression.

Results

Both PSV1 and PSV2 significantly increased from pre-gestational to first trimester and then decreased slowly throughout gestation ($p=0.002$ and $p<0.001$). The PSV2/PSV1 ratio decreased significantly throughout gestation ($p<0.001$). Ophthalmic artery PI increased slightly during pregnancy and remained stable throughout gestation ($p=0.03$).

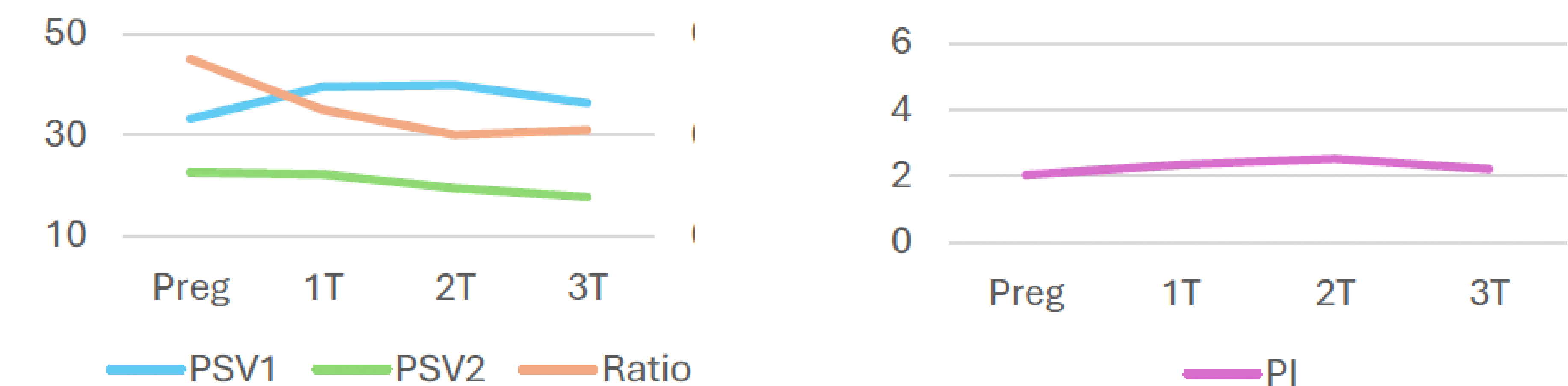


Figure 1. Median longitudinal evolution of ophthalmic artery Doppler parameters across gestation.

Conclusion

Maternal ophthalmic artery Doppler parameters vary from pre-gestational stage and throughout gestation. A better understanding of its physiological changes within normal pregnancies may help in its clinical implementation.