

PROF. N.VEDMEDOVSKA^{1,2}; D.REZEBERGA^{1,2}; I.PITKEVIČA^{1,2}; A. BUKOVA-ŽIDEĻŪNA³

1.Department of Obstetrics and Gynaecology, Rīga Stradiņš University; Riga, Latvia

2.Riga Maternity Hospital, Riga, Latvia

3.Institute of Public Health, Rīga Stradiņš University; Riga, Latvia

Objectives

The ophthalmic artery (OA) is easily accessible for Doppler evaluation. Recent studies highlight its affordability and reliability as a predictive biomarker for PE. While accurate assessment requires specialized expertise, its cost-effectiveness makes it a practical option. The main objective was to evaluate the correlation between OA PSV ratio and maternal parameters (MAP, BMI, 1st trimester PAPP-A, a.uterinae PI). The secondary aim was to evaluate the length of the learning curve.

Methods

We carried out a prospective pilot study involving pregnant women with singleton pregnancies who were referred for the third-trimester ultrasound at Riga Maternity Hospital. A single ultrasound specialist (NV) conducted the assessments, measuring OA flow velocities in 81 pregnant woman. Additionally, a single resident repeated the measurements in 20 patients.

The mother was placed in the supine position, and a linear transducer was gently placed over her closed upper eyelid. Color flow Doppler was used to identify the OA. The average of 4 measurements was obtained. PSV ratio was calculated. Blood pressure was measured non-invasively using an arm cuff while the participant was seated. PAPP-A values were obtained from maternal antenatal care records.

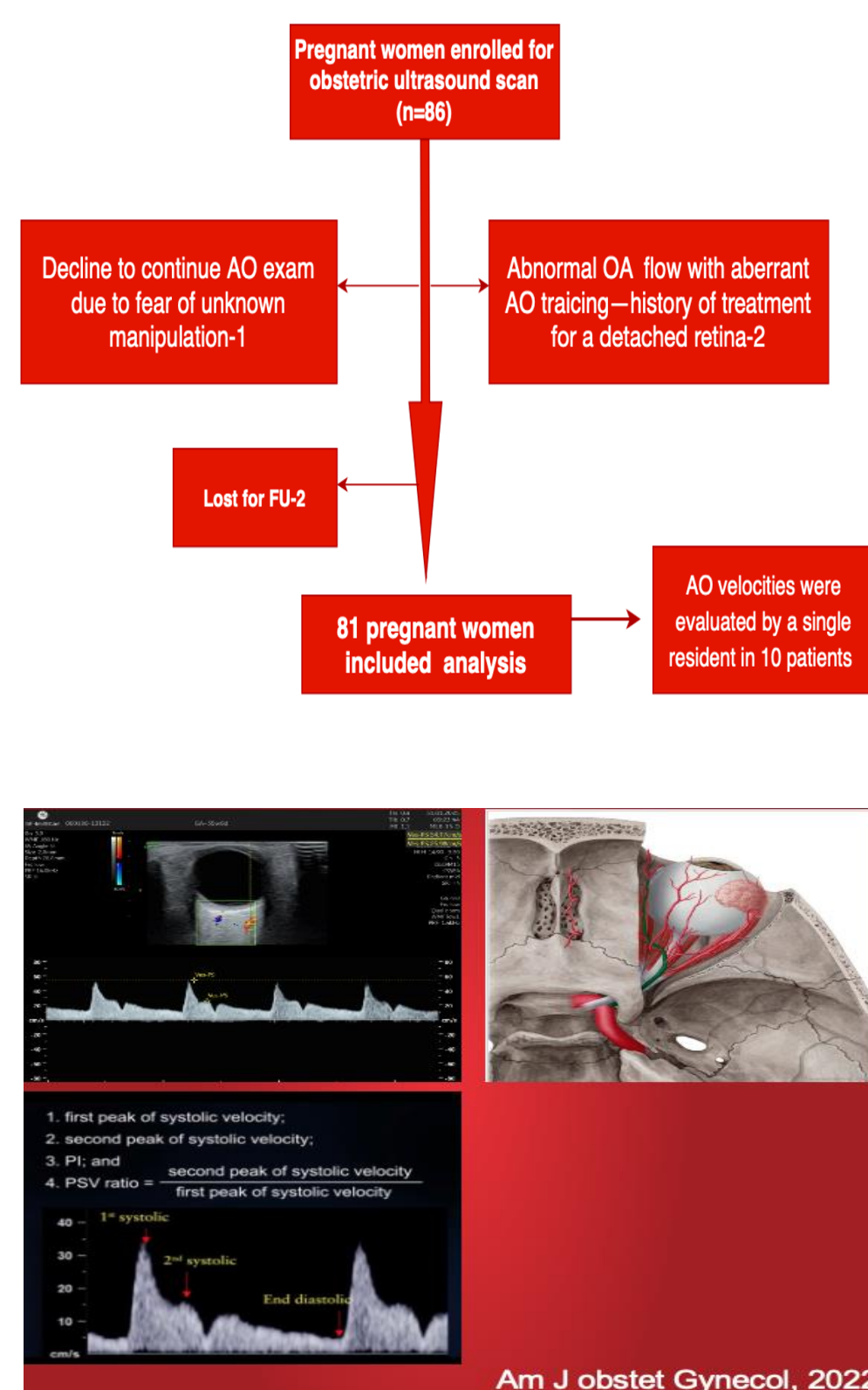
Results

- ✓ 36 (44.4%) were **primiparous**, while 45(55.6%) -**multiparous**.
- ✓ **BMI (Body Mass Index)** (Mean, SD): **24.2 (±4.3)**
- ✓ 18 out of 81 (22.2%) patients used antihypertensive therapy.

- ❖ There are statistically significant differences in blood pressure groups across different OA PSV ratio (p=0.041).
- ❖ OA PSV ratio > 0.66- the BP group values tend to remain higher (closer to >140/90).
- ❖ Among pregnant women who used antihypertensive therapy, 6 out of 18 (33.33%) had an AO PSV ratio equal to or higher than 0.70, compared to 1 out of 63 (1.59%) in the group without antihypertensive therapy (p=0.0003) OR mean AO PSV ratio 0.6 (SD 0.1) vs 0.5 (SD 0.1)- p=0.021.
- ❖ Among pregnant women who used aspirin, 6 out of 11 (54.55%) had an AO PSV ratio equal to or higher than 0.70, compared. to 5 out of 70 (7.14%) in the group without aspirin use (p=004).
- ❖ There is no significant correlation between AO PSV ratio and PAPP-A (MOM, p>0.05).
- ❖ After 5 AO examination independent evaluation took only 1.5-2 minutes Vs 3-4 minutes for UtA

Conclusion

This method provides valuable insights into hypertensive complications and is simple to learn. Residents can apply this method during their practice.



The Ophthalmic artery PSV ratio and Uterine artery PI

❖ There is a statistically significant correlation between AO PSV ratio and UtA (p = 0.015).

❖ There is a statistically significant correlation between AO PSV ratio and BMI (p = 0.039).

