

[EP08.26] Myocardial and brain blood flow re-distribution in growth-restricted fetuses and fetal blood pressure indices estimated in phased-tracking method

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Introduction / Background

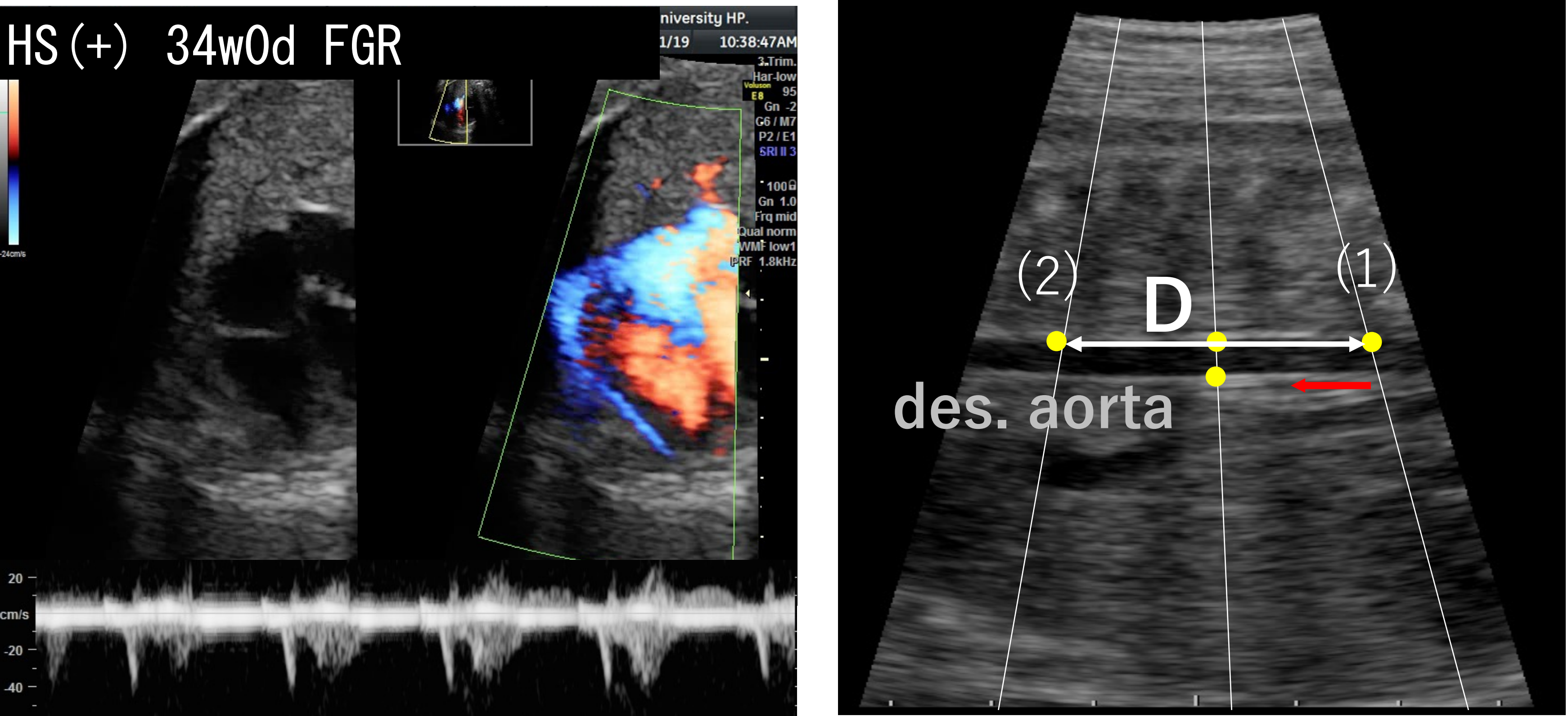
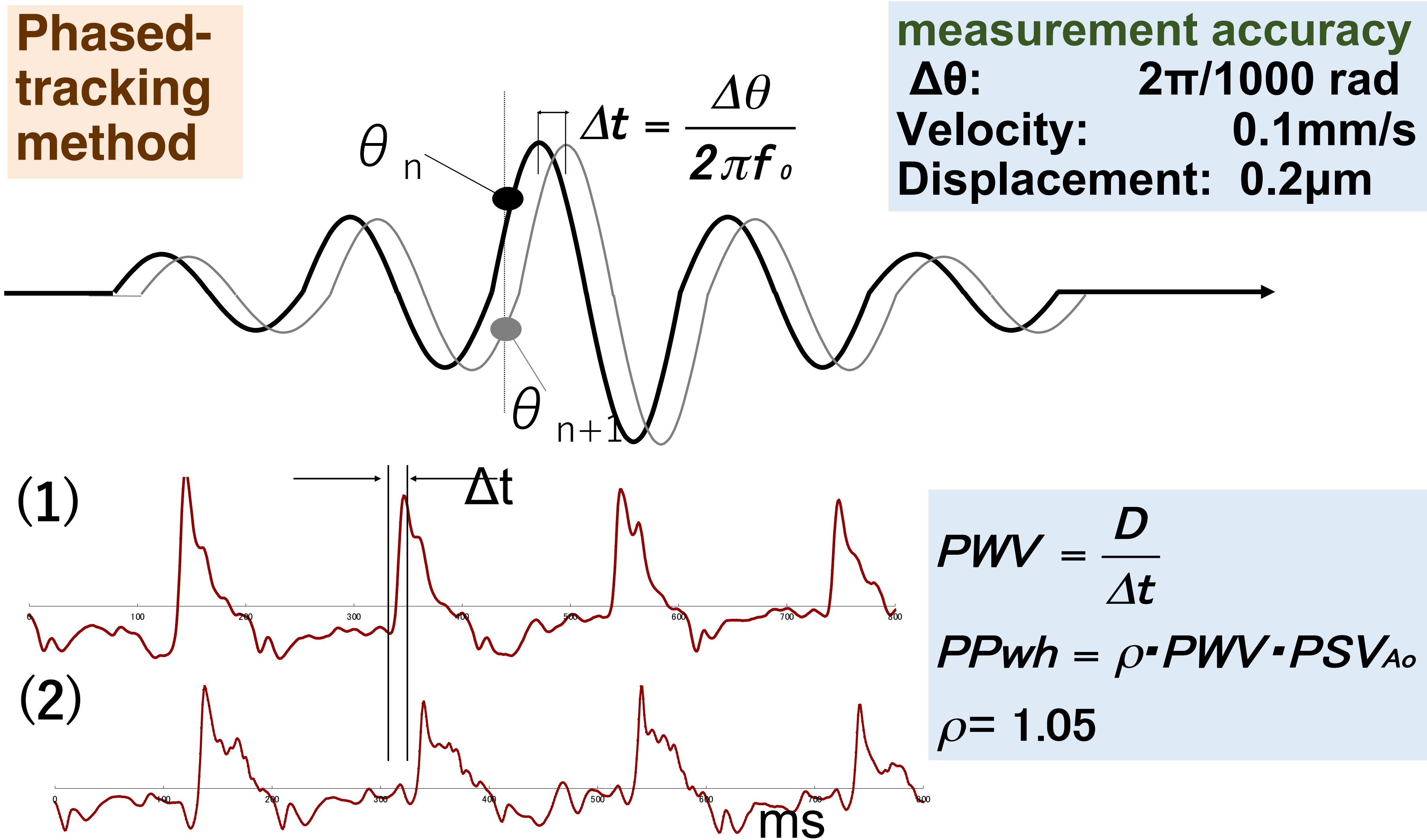
Increased coronary blood flow signal in fetal growth restriction is assumed to be heart-sparing effect (HS). **Ultrasonic 'phased tracking method' (PTM)** enables non-invasive measurements of pulse wave velocity (**PWV**) and pulse pressure (**PP**).

Objectives

Fetal PWV in growth-restricted fetuses (FGR) with or without organ blood flow re-distribution were investigated.

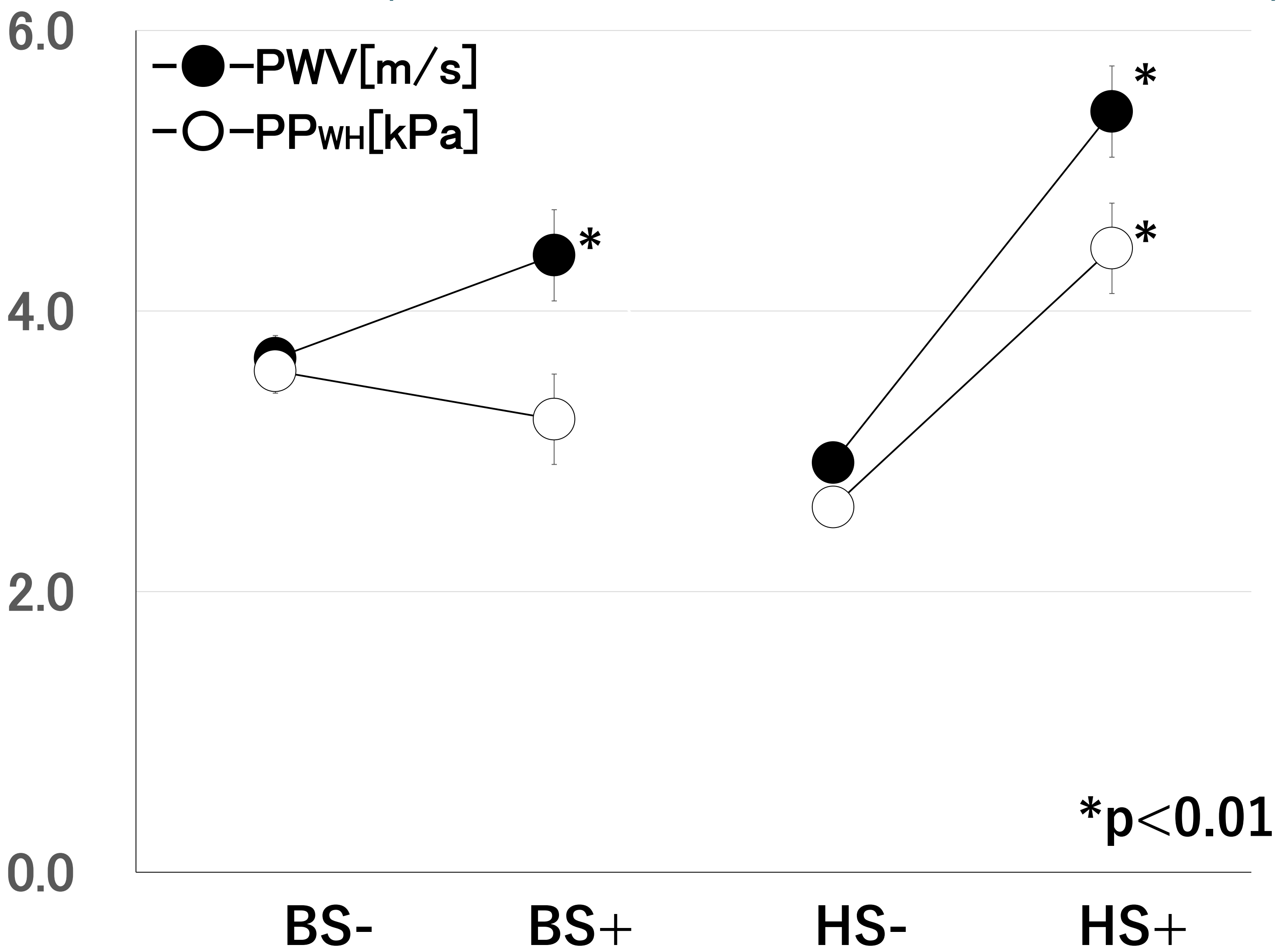
Methods

A case-control study in FGR cases in 24 to 36 weeks. Brain sparing (**BS**) and heart sparing (**HS**) were evaluated. Color and pulsed Doppler were employed to prove the increased flow in distal coronary artery, which was defined to be a positive sign of heart sparing (HS+). PWV on fetal descending aorta was also measured using PTM. PP was estimated from PWV and maximum flow velocity in descending aorta using formula of Water-hammer. A total of 105 cases were enrolled.



Results

A total of 105 cases were enrolled.
(BS+: 65, BS-: 40, HS+: 61, HS-: 44)



Conclusions

- Relatively high PWV and ePP were probable cause of increased coronary flow, which was dominant in diastolic phase.
- Organ blood flow re- distribution was suggested to carry elevated blood pressure even in fetal period, which could support the fetal programming hypothesis or DOHaD.