

EP07.72 : Association of maternal serum essential fatty acid levels and fetal fractional limb volume across gestation: a prospective observational study

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Aim

ω -6 fatty acids (arachidonic acid [ARA]) have been associated with reduced birth weight. This study aimed to investigate the relationship between maternal serum essential fatty acid levels (including ARA) and fetal fractional limb volume.

Methods

- A prospective cohort study with 115 singleton pregnancies.
- Maternal blood samples were collected at 10, 24, and 30 weeks of gestation
- The percentages of ARA, EPA, and DHA relative to total fatty acids were calculated. Fetal fractional arm volume (AVol) and fractional thigh volume (TVol) were measured using 3D ultrasonography.
- Multiple regression analysis was performed to assess the association between maternal serum fatty acid levels and fetal fractional limb volume, adjusting for potential covariates.

Conclusion

- Maternal serum ARA in mid-gestation was significantly and negatively associated with fetal AVol in late pregnancy.
- Elevated maternal serum ARA may adversely affect fetal soft tissue development in late gestation.

Figure 1. Fractional limb volume measures; cylindrical Limb subvolume based on 50% of total diaphysis length.

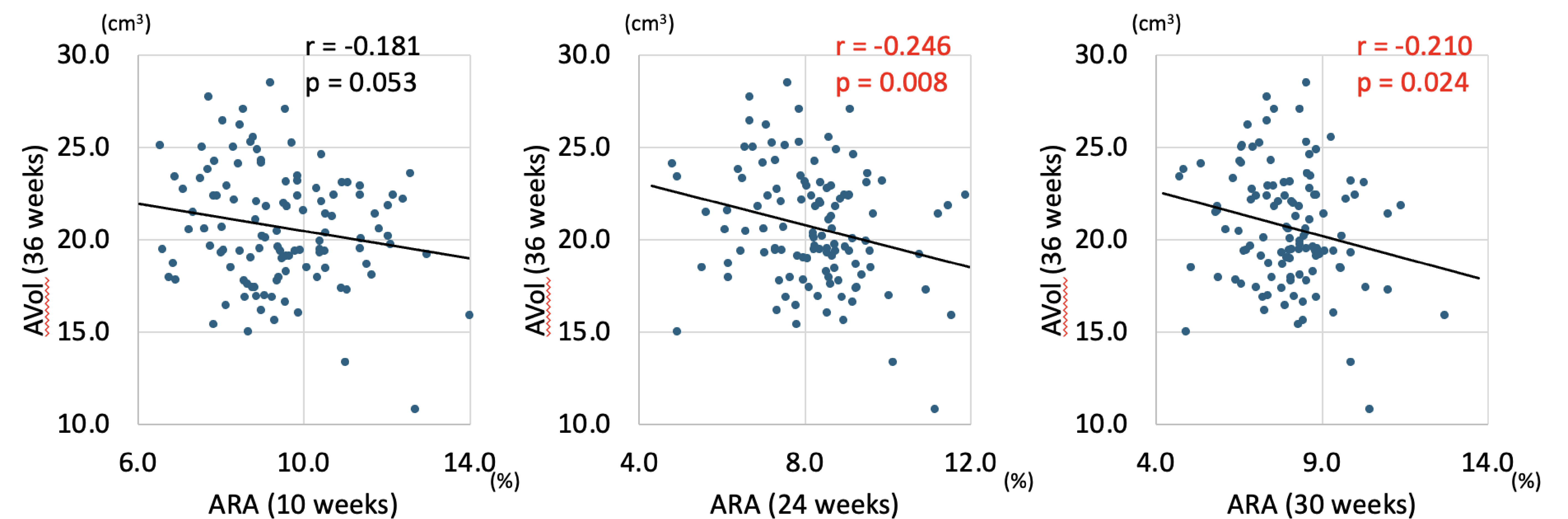
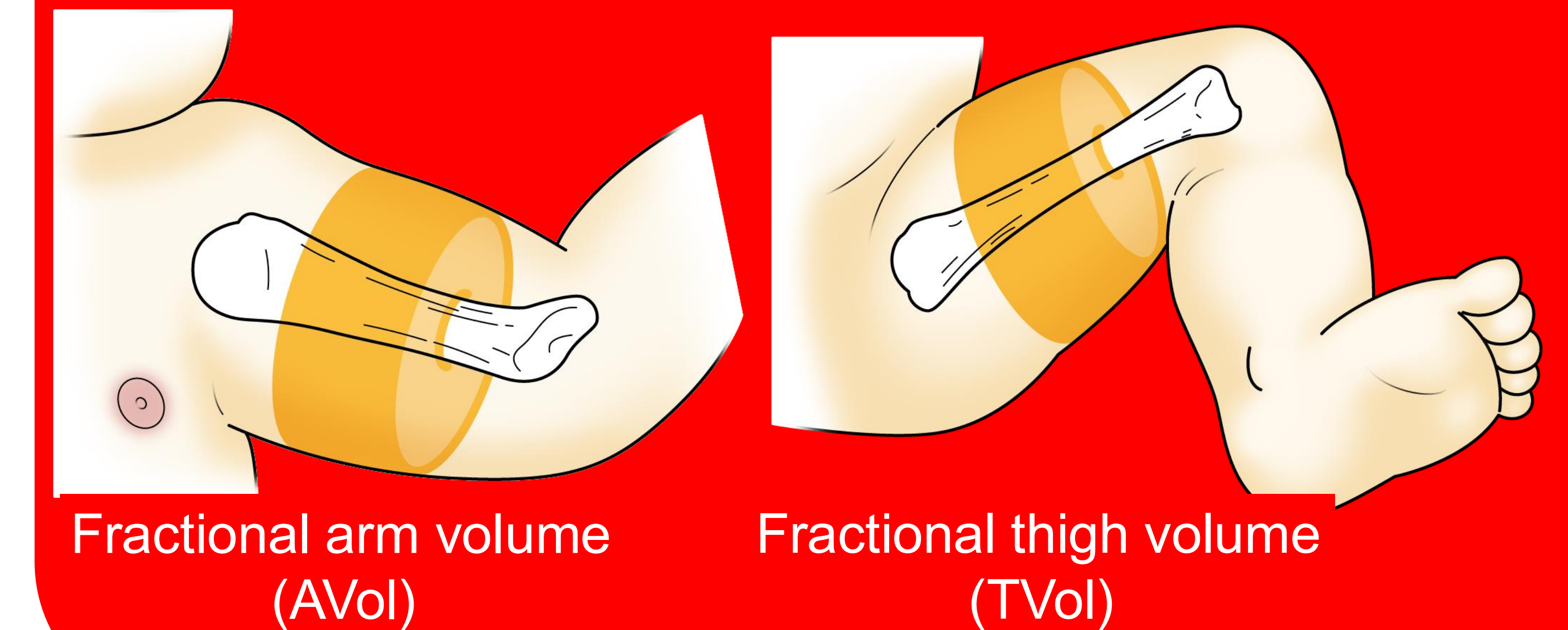


Figure 1. Association between maternal serum ARA levels and fetal AVol at 36 weeks