

EP16.45. Hypothyroidism and uterine arteries pulsatility index at different stages of pregnancy.

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Introduction

Hypothyroidism is the most common thyroid disorder during pregnancy and has been linked to adverse perinatal outcomes, even in subclinical cases and among women treated with levothyroxine who remain euthyroid. Thyroid hormones regulate growth factors and cytokines that are essential for placental angiogenesis and trophoblast invasion.^{1,2} However, studies regarding alterations in thyroid function and placental perfusion, such as the uterine artery pulsatility index (PI), are scarce.

Objectives

To compare the PI of the uterine arteries among the three trimesters of pregnancy in women with hypothyroidism treated with levothyroxine.

Methods

We conducted a retrospective study on 46 women who received care at the State Center of Timely Prenatal Screening between 2018 and 2024.

Inclusion criteria:

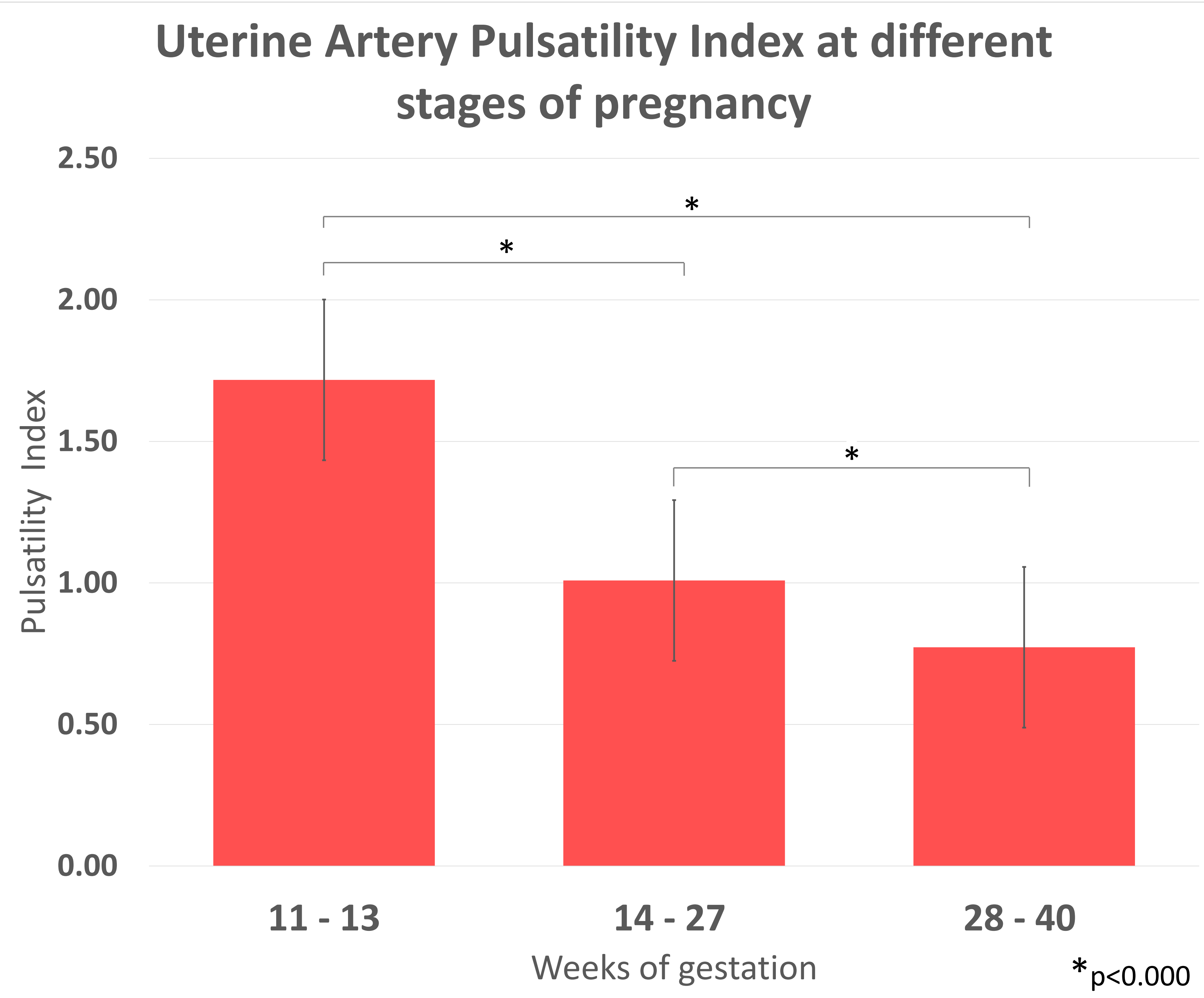
- ✓ Singleton pregnancies.
- ✓ Pregestational hypothyroidism treated with levothyroxine.
- ✓ Women with three or more measurements of the uterine arteries PI throughout the three trimesters of pregnancy by Doppler, performed by personnel certified by the Fetal Medicine Foundation, using high resolution GE Voluson equipment and ViewPoint® software.

Exclusion criteria:

- x Non singleton pregnancies.
- x Women with other autoimmune diseases and/or endocrine pathologies.
- x Pregnancies with fetal malformations or with high risk of aneuploidies.

Results

Mean PI values were 1.71 ± 0.46 , 1.00 ± 0.29 , and 0.77 ± 0.18 (mean $\pm$ SD) during 11-13, 14-27, and 28-40 weeks of gestation respectively. These values were statistically different among groups, from early to advanced stages of pregnancy ($p < 0.001$).



Conclusion

As the pregnancy progressed, PI of uterine arteries decreased.

Uterine arteries PI values were similar to those reported in healthy pregnant women in other studies.

Our findings may be useful for populations of pregnant women with the characteristics mentioned in this study.

To our knowledge, this is the first study that reports uterine arteries PI along the three trimesters of pregnancy in women with hypothyroidism; however, futher studies considering more variables are needed to further explore these results.

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²doi.org/10.1016/j.clinme.2025.100287