

Challenges in establishing third-trimester cerebroplacental ratio reference ranges in an unselected population

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Objective

To determine reference curves for CPR, PI-MCA, and PI-UA in the third trimester of pregnancy in Lebanon and analyze the relationship between CPR and the presence of a nuchal cord.

Methods

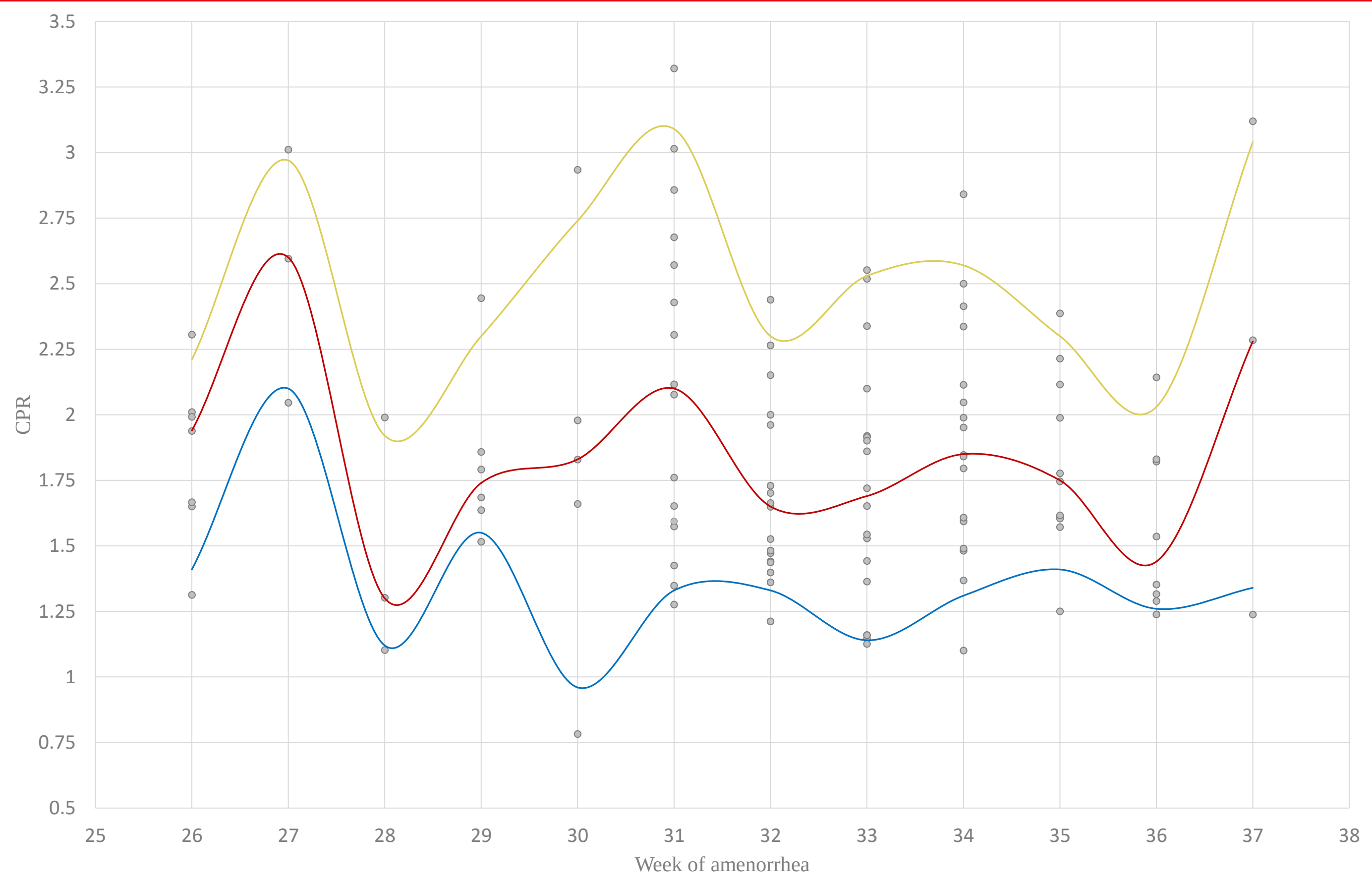
This was a prospective observational study conducted on 85 pregnant women who underwent Doppler ultrasounds between 27 and 40 weeks of gestation by two experienced sonographers. Only singleton pregnancies with normal fetal anatomy and no maternal-fetal complications were included. Sociodemographic characteristics and nuchal cord were assessed.

Results

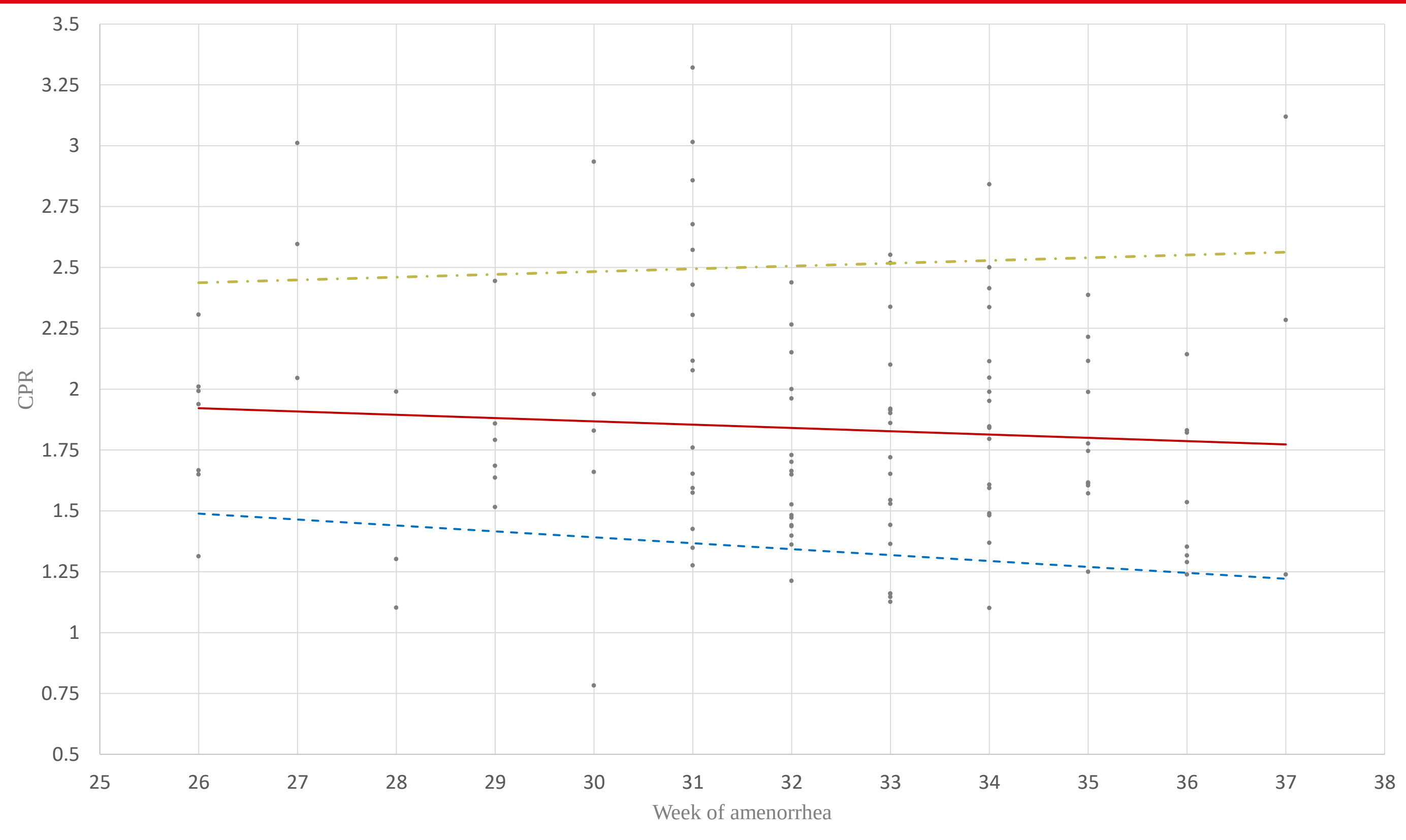
A total of 114 measurements of CPR, PI-MCA, and PI-UA were collected and analyzed. Reference curves for CPR, PI-MCA, and PI-UA were established.

The mean CPR in the study was 1.84 ± 0.50 , with values ranging from 0.78 to 3.32 . PI-UA showed a progressive decrease with gestational age, while PI-MCA exhibited a downward trend with fluctuations around 30 weeks of gestation.

No significant differences in CPR were observed based on the presence of a nuchal cord, nor any correlation with maternal parameters.



Variation of CPR according to gestational age (weeks of amenorrhea). The gray points represent the individual values of CPR. The curves illustrate the 5th (blue), 50th (red) and 95th (yellow) percentiles.



Linear regression of CPR percentiles on gestational age. Gray dots represent individual CPR values. Curves illustrate percentiles 5 (blue), 50 (red), and 95 (yellow)

Conclusion

This study establishes reference curves for CPR in the Lebanese population for the first time, aiming to improve prenatal assessment. Multicentric studies remain necessary to refine these standards

