

EP 12.10 Serial cervical shortening as an independent predictor of spontaneous preterm birth in twin pregnancies : a multicenter cohort study

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Introduction

A single cervical length (CL) measurement is an established predictor of spontaneous preterm birth (sPTB). However, the clinical significance of the rate of cervical shortening over time remains poorly defined, particularly in twin pregnancies.

Aim: To evaluate longitudinal changes in CL between 20–24 and 24–28 weeks, and to determine whether the rate of cervical shortening independently predicts sPTB.

Methods

Design Multicenter retrospective cohort from 10 referral centers

Population Twin pregnancies with serial transvaginal CL measurements at both 20–24 and 24–28 weeks.

Predictors (1) CL <25 mm at each time point (2) rate of cervical shortening ; absolute change over the 4-week interval (mm) and per week (mm/week).

Outcome sPTB <37, <34, <32 weeks

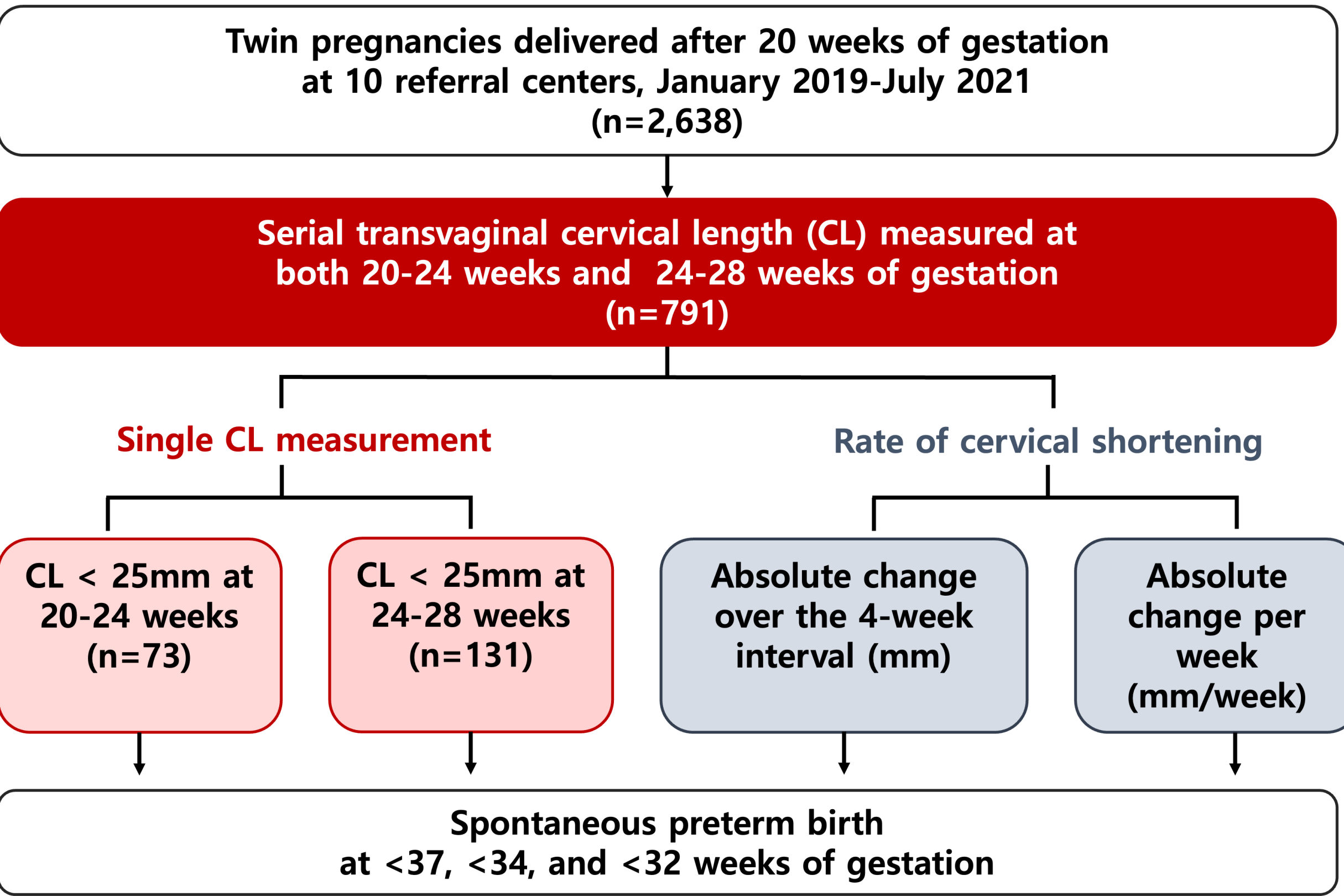


Figure 1. Study flow chart and analysis plan

Results

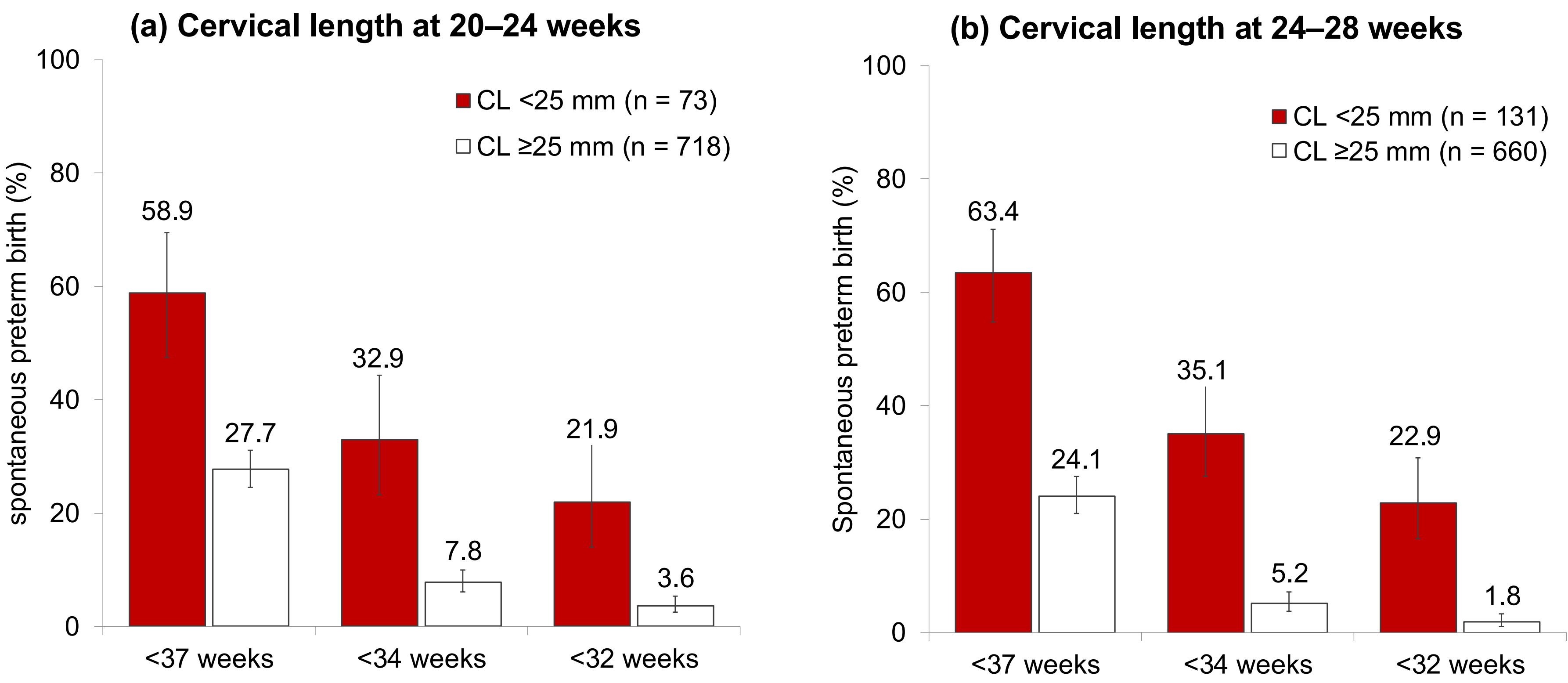


Figure 2. Rates of spontaneous preterm birth according to cervical length (All comparisons $P < 0.001$).

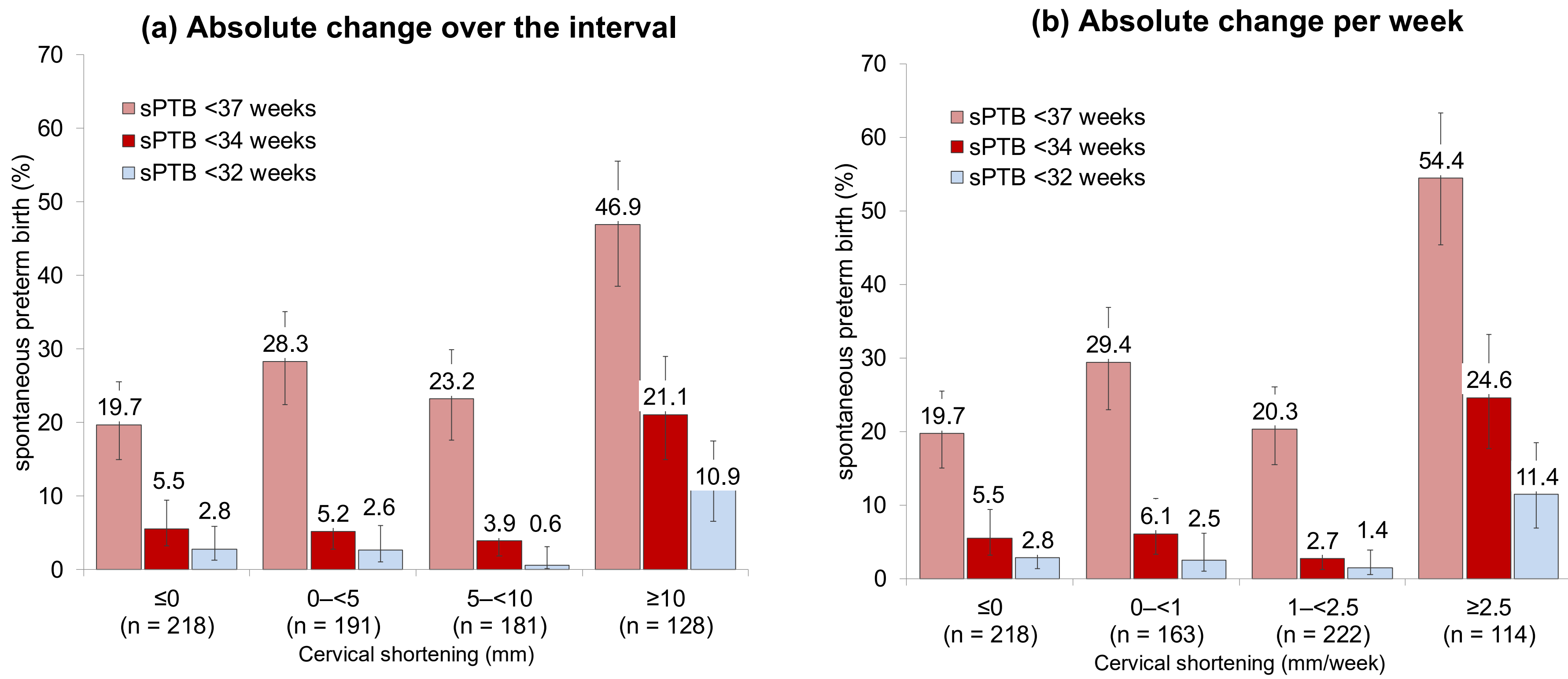


Figure 3. Rates of spontaneous preterm birth according to the magnitude of cervical shortening in women with a cervical length ≥25 mm at 20–24 weeks (P for trend < 0.001 for spontaneous preterm birth before 37 and 34 weeks and ≤ 0.006 before 32 weeks).

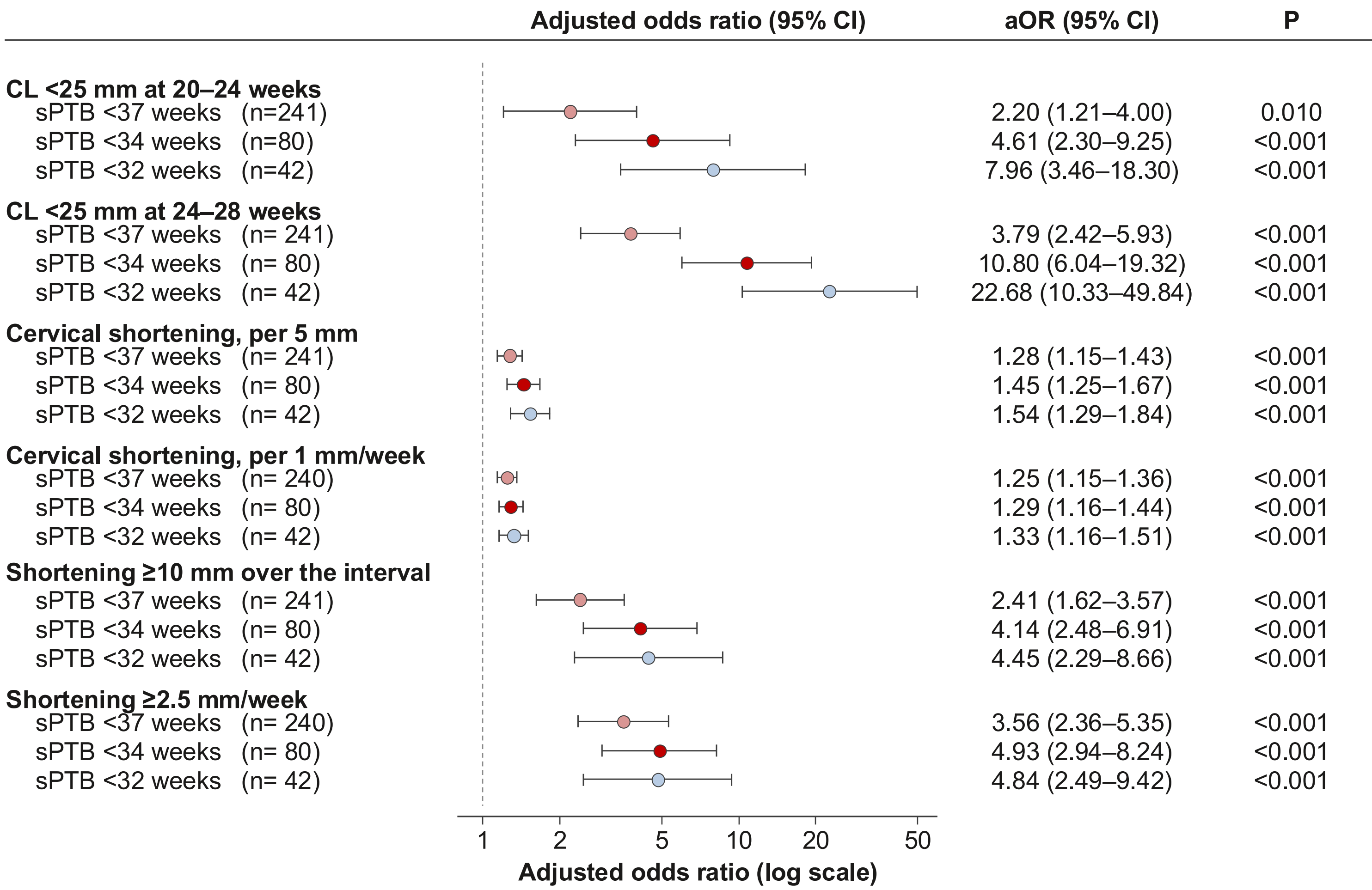


Figure 4. Adjusted odds ratios for spontaneous preterm birth (n = 791)

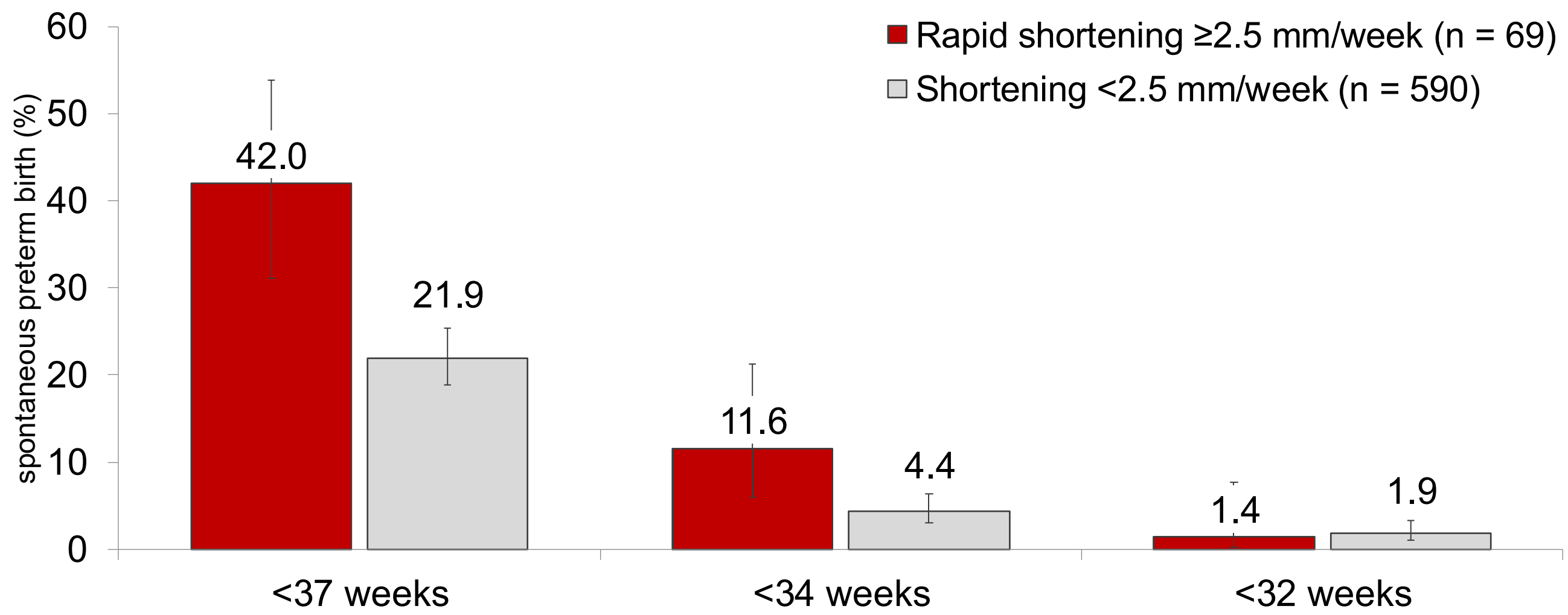


Figure 5. Rapid cervical shortening and spontaneous preterm birth in women whose cervix remained ≥25 mm at 24–28 weeks (n = 659; $P < 0.001$ at <37 weeks, $P = 0.011$ at <34 weeks, however $P = NS$ at <32 weeks; Adjusted odds ratios with previous preterm birth, cerclage, and vaginal progesterone)

Conclusion

- In twin pregnancies, a short cervix and the rate of cervical shortening are independent predictors of spontaneous preterm birth <34
- CL <25 mm at 24–28 weeks carried the highest risk (aOR 10.8 for sPTB <34 weeks).
- Rapid CL shortening predicted sPTB <34 weeks (aOR 6.2) even when CL ≥25 mm at 24–28 weeks
- Serial CL identifies high-risk twins missed by a single threshold.