Can we apply a population approach to preterm birth prevention? An ecological study of preterm and early term births in 34 high-income countries.

Marie Delord⁴, Laust Mortensen⁵, Jennifer Zeitlin⁶, the Euro-Peristat Group⁷ and the PREBIC Epidemiology Working Group⁸

marie.delord@inserm.fr

Background

- Preterm birth, <37 weeks of gestational age GA, is associated with adverse health outcomes with life-long consequences¹. Early term births, 37-38 weeks are also at higher risks of adverse health outcomes than infants born full term, at 39 and 40 weeks².
- We do not know if risk factors for delivery before full term are specific to preterm births or to earlier delivery more generally.
- Current prevention interventions target the highest risk pregnancies with very little reduction in preterm birth rates therefore, other approaches to prevention are needed.

Aim: We investigated whether variations in preterm birth rates and trends reflect differences in risk of earlier delivery across the gestational age spectrum in high-income countries.

Key findings

- Rates of early term birth vary widely across high-income countries from 15 to 30% of all births.
- Rates and trends of early term and preterm birth were correlated overall and for indicated initiated and spontaneous births.
- Common risk factors may be responsible for shifts in the gestational age distribution.
- Our results support further investigation of a population approach to preterm birth prevention.

Methods

Data sources:
- Routine aggregate data on the gestational age (GA) distribution overall and by mode of delivery.
- In 27 European countries/regions, the United States, Canada, Japan and Australia.
- Data from 1996-2010.

Study population: Singleton live births ≥22 weeks GA.

Definitions:

- We used the best obstetric estimate of GA, in completed weeks...

Main outcomes:

- Preterm birth (22-36 weeks GA).
- Early term birth (37-38 weeks GA).
- Mean term GA (37-41 weeks GA).

Statistical analyses:

- Pearson’s test, adjusted for clustering in time series analyses.

Results

- GA rates: Preterm birth rates ranged from 4.1%-8.2% (med: 5.5%). Early term birth rates ranged from 15.6%-30.8% (med: 22.2%) in 2010.

- By mode of onset of delivery: Time series results were similar for spontaneous (adj- r = 0.31, p<0.01; N=47) and provider-initiated births (adj- r = 0.37, p<0.01; N=45).

References: