



Prediction of preterm delivery by mid trimester cervical length in the era of progesterone

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Objective

To assess the feasibility and the results of introducing a universal policy of screening for preterm delivery followed by progesterone in the high risk group.

Methods

Transvaginal sonography for cervical length (CL) measurement at 20-24 weeks of gestation. Vaginal progesterone therapy was offered to women with $CL \leq 15\text{mm}$.

Results

10,969 singleton pregnancies were assessed. The decline rate was 1.32%. Spontaneous preterm delivery at less than 32 weeks (SPD32), less than 34 weeks (SPD34) and less than 37 weeks (SPD37) occurred in 0.45%, 0.77% and 3.15% respectively. Women considered at increased risk because of previous history contributed 38.8% to the SPD34. CL measurement was best described by a mixture model distribution which comprised of a 'short' and a 'long' component differing in percentage in the different subgroups of preterm delivery with the 'short' component being stronger the earlier the birth. CL, history of miscarriage and prior preterm delivery were the independent parameters in the construction of a predictive model ($AUC = 0.70$, $p < 0.001$). The detection rates for SPD34 by $CL \leq 15\text{mm}$ and $CL \leq 25\text{mm}$ were 46% and 54% respectively. The rate of SPD34 in women with $CL \leq 15\text{mm}$ receiving progesterone treatment was 19%.

Conclusion

Universal screening for preterm delivery by vaginal sonography at 20-24 weeks is feasible and well accepted by pregnant women and can identify about half of the preterm deliveries prior to 34 weeks.