



Title	Screening to Prevent Spontaneous Preterm Birth: Systematic Reviews of Accuracy and Effectiveness Literature with Economic Modeling
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Aim

To systematically review evidence on tests intended to identify women with singleton pregnancy at risk of spontaneous preterm birth, and interventions that prevent or delay birth, to allow institution of treatments to improve neonatal outcome.

Conclusions and results

The overall aim was to identify areas where evidence is strong enough to generate recommendations for clinical practice, or otherwise key areas and research questions requiring further primary research. This project intended to meet the following objectives: 1) To determine, among asymptomatic women with singleton gestation in early pregnancy (before 23 completed weeks of gestation): a) the accuracy of various tests for predicting the risk of spontaneous preterm birth; and b) the effectiveness of various interventions for preventing spontaneous preterm birth. 2) To determine, among women with a viable singleton pregnancy (after 23 completed weeks of gestation), symptomatic of threatened preterm labor with intact amniotic membrane and before advance cervical dilatation: a) the accuracy of various tests in predicting the risk of imminent preterm birth; and b) the effectiveness of various antenatal interventions to delay preterm birth to allow institution of interventions for improving outcome of the premature neonate. 3) To determine the cost effectiveness of testing (in both population) and consequent prevention and treatment strategies using decision-analytic modeling. The output from these reviews was used in economic modeling to determine the most efficient management strategies.

Overall, the studies available were generally of poorer quality either in methods or in reporting. A few accurate tests were identified in predicting spontaneous preterm birth in asymptomatic women at early gestation: ultrasonographic cervical length measurement, cervicovaginal fetal fibronectin screening, uterine contraction monitoring with a home uterine monitoring device, and amniotic fluid C-reactive protein measure-

ment. While for women symptomatic with threatened preterm labor (and a viable fetus): absence of fetal breathing movements, cervical length and funneling, amniotic fluid interleukin 6, serum C-reactive protein (for predicting birth within 2–7 days of testing); and matrix metalloproteases-9, amniotic fluid interleukin 6, cervico-vaginal fetal fibronectin, cervico-vaginal beta-hcg and cervicovaginal interleukin 8 (for predicting spontaneous preterm birth before 34 or 37 weeks' gestation). Progestational agent, periodontal therapy and fish oil appeared promising as preventative interventions in asymptomatic women.

Recommendations

See Executive Summary link at www.hta.ac.uk/project/1486.asp.

Methods

See Executive Summary link at www.hta.ac.uk/project/1486.asp.

Further research/reviews required

See Executive Summary link at www.hta.ac.uk/project/1486.asp.