Management of Preterm Labor

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By OBGYN.net Staff [3]

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Prepared by:
Research Triangle Institute, Research Triangle Park, NC
Nancy D. Berkman, Ph.D.
Principal Investigator

John M. Thorp, Jr., M.D.
Katherine E. Hartmann, M.D., Ph.D.
Kathleen N. Lohr, Ph.D.
Anjolie E. Idicula, B.A.
Melissa McPheeters, M.P.H.
Norma I. Gavin, Ph.D.
Timothy S. Carey, M.D.
Sue Tolleson-Rinehart, Ph.D.
Anne M. Jackman, M.S.W.
Victor Hasselblad, Ph.D.
Emily C. Puckett, B.A.
Investigators

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On December 6, 1999, under Public Law 106-129, the Agency for Health Care Policy and Research (AHCPR) was reauthorized and renamed the Agency for Healthcare Research and Quality (AHRQ). The law authorizes AHRQ to continue its research on the cost, quality, and outcomes of health care, and expands its role to improve patient safety and address medical errors.

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Preface

The Agency for Healthcare Research and Quality (AHRQ), formerly the Agency for Health Care Policy and Research, through its Evidence-based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in
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their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

To bring the broadest range of experts into the development of evidence reports and health technology assessments, AHRQ encourages the EPCs to form partnerships and enter into collaborations with other medical and research organizations. The EPCs work with these partner organizations to ensure that the evidence reports and technology assessments they produce will become building blocks for health care quality improvement projects throughout the Nation. The reports undergo peer review prior to their release.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the health care system as a whole by providing important information to help improve health care quality.

We welcome written comments on this evidence report. They may be sent to: Director, Center for Practice and Technology Assessment, Agency for Healthcare Research and Quality, 6010 Executive Blvd., Suite 300, Rockville, MD 20852.

John M. Eisenberg, M.D.
Director
Agency for Healthcare Research and Quality

Douglas B. Kamerow, M.D.
Director, Center for Practice and Technology Assessment
Agency for Healthcare Research and Quality

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**Structured Abstract**

**Objectives.** Preterm labor is often a prelude to early births and the significant attendant burden of infant morbidity and mortality. To address the question of how best to manage women in preterm labor, the Research Triangle Institute-University of North Carolina Evidence-based Practice Center undertook a rigorous review of the scientific literature on: (1) appropriate criteria for diagnosing preterm labor and use of three biologic markers, fetal fibronectin (fFN), endovaginal ultrasound (EVUSD), and salivary estriol; (2) efficacy and effectiveness of tocolytics-pharmaceutical agents including beta-mimetics, calcium channel blockers, magnesium sulfate, nonsteroidal antiinflammatory disease drugs (NSAIDs), and ethanol that arrest preterm labor symptoms); (3) efficacy and effectiveness of antibiotics for treating covert infections that might have prompted preterm labor; and (4) efficacy of home uterine activity monitoring.

**Search Strategy.** We conducted a detailed search of the relevant literature using MEDLINE; EMBASE; the Cochrane Collaboration and its related York Database, International Pharmaceutical Abstracts; the Health Economic Evaluations Database; Genderwatch; and the Population Index. The Medical Subject Headings included premature labor, diagnosis, epidemiologic study characteristics, terms for specific therapies (biologic markers, antibiotics, and tocolytic agents) and costs, cost analysis, and cost-benefit analysis. We conducted an extensive search of the gray literature, chiefly government documents, with a focus on tocolytics and biologic markers.

**Selection Criteria.** Our inclusion criteria were randomized controlled trials (RCTs) and cohort or case-control studies on biologic markers, tocolytics, and antibiotics that met the following specifications: published from 1966 to 1999 in English, French, or German; including pregnant females of any age with signs and symptoms of preterm labor; involving inpatient and outpatient settings; and measuring delivery, maternal morbidities, and infant health outcomes. Home uterine activity monitoring was further restricted to RCTs published in English since 1980.
Data Collection and Analysis. We conducted dual and blinded reviews of abstracts of articles and pulled full articles. Those articles meeting inclusion criteria were given a detailed dual review and abstraction onto four (topic-specific) data extraction forms. We judged the quality of the individual articles (on internal validity, statistical considerations, clinical relevance of findings, an external validity) and the strength of the evidence overall in each topic area (considering consistency of findings over all studies, quality rating of each study, magnitude of important outcomes, and meta-analysis results). In addition to the systematic reviews of the literature, we conducted meta-analyses of treatment effects from first-line and maintenance tocolytics, antibiotics, and home uterine activity monitoring.

Main Results. The quality of this literature is questionable in many respects, including the definition of preterm labor, the size of the trials, confounding of results because of use of cointerventions, reliance on bivariate analyses without including stratified analyses such as would be available through survival analysis, and failure to separately analyze women who have conditions that culminate in medically indicated preterm births.

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