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Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-Based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in 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.

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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.

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Structured Abstract

Objectives. The literature was systematically reviewed to compare the benefits and harms of a trial of labor (TOL) and an elective repeat cesarean delivery (ERCD), and to examine factors that influence decisionmaking.

Search strategy. Published literature on all vaginal birth after cesarean (VBAC) topics was identified by multiple searches of MEDLINE® (1966 to 2002) and HealthSTAR (1975 to 2002), from reference lists of systematic reviews, and from local and national experts. Online searches were performed on Cochrane systematic reviews and controlled trials registry, Centre for Reviews and Dissemination sites, and EMBASE databases. For topics related to patient preferences and satisfaction, PsycINFO and CINAHL® databases were also searched.

Selection criteria. Studies begun or published before 1980 and studies that focused on patients with specific conditions such as gestational diabetes, human immunodeficiency virus, preeclampsia, and so on were excluded. Studies that exclusively focused on nulliparous women; vertical, lower vertical, "classical" or "classic" cesarean incisions; vaginal breech delivery; preterm delivery; multiple gestation; or low birth weight were also excluded.

Data Collection and Analysis. A technical advisory panel provided input from obstetricians, family physicians, nurse midwives, payers, and patients to ensure that the project addressed clinical questions and issues. An analytic framework was developed and later refined with input from national experts and members of the technical panel. The framework relates the 10 topics reviewed on clinical decision-making for pregnant women with prior cesarean delivery. The strength and suitability of the evidence regarding the risks of major maternal and infant morbidity and mortality associated with TOL and ERCD is the main focus of this report. Studies were rated for quality. We included 180 articles with original data about maternal and infant outcomes relevant to a key question in one or more topic areas.

Main Results. The literature concerning TOL and ERCD is flawed in several ways: imprecise measurement of outcomes (e.g., maternal infection, perinatal death), making it difficult to determine the portion of events directly attributable to maternal choice of delivery route; lack of standards for terminology (e.g., no standard classification for severity of uterine rupture, nor attribution specifically to the disruption of the cesarean scar); and limited attention to comparability between groups (e.g., studies of ERCD where it is unclear whether patients were eligible for TOL). Similarly, important definitional confounding prevents determination of whether signs, such as prolonged fetal bradycardia, have any predictive premonitory value.

There is no direct evidence regarding the benefits and harms of TOL relative to ERCD in women who are similar in every respect except choice of delivery route. Several large cohort studies provide indirect evidence about relative benefits and harms of TOL versus ERCD. Overall, these studies report an increased risk of perinatal death and symptomatic uterine rupture of a cesarean scar with TOL, no increased risk of asymptomatic uterine rupture (dehiscence), maternal death or hysterectomy from either route, and increased risk of infection from ERCD. However, the magnitude of risk is uncertain due to methodologic deficiencies of the studies.

Further studies are needed to test the reliability and usefulness of economic models and predictive tools.

The literature concerning factors that influence patient decisionmaking and satisfaction with childbirth was poor, giving us little insights into patient's priorities.

Conclusions. The deficiencies in the literature about the relative benefits and harms of TOL versus ERCD are striking. Patients, clinicians, insurers, and policymakers do not have the data they need to make truly informed decisions about appropriate delivery choices following one of the most common surgical procedures performed on women. Given the rising prevalence of this condition, and potential for devastating consequences for thousands of women and children each year, obtaining accurate data should be a high research priority.