Resources for Evidence-Based Practice, March/April 2003

This column highlights new resources that clarify knowledge about effects of specific practices in maternal child health. The focus is on new and recently updated systematic reviews and overviews of best research evidence. The column identifies recent additions to three major evidence-based databases:

- **Cochrane Database of Systematic Reviews (CDSR)** uses a standardized method to review studies that evaluate effects of specific health care practices. It is a leading source of high-quality reviews.
- **Database of Abstracts of Reviews of Effects (DARE)** is a compilation of structured abstracts of quality-assessed systematic reviews. Staff at the United Kingdom National Health Service’s Centre for Reviews and Dissemination use quality criteria to determine whether a review is included and to develop abstracts.
- **Clinical Evidence** is a source of overviews of the best available research about effects of interventions. These overviews from the BMJ Publishing Group generally examine multiple questions (for example, prevention and treatment) about specific health concerns.

The column also identifies recent evidence-based research reviews from other sources, and ends with a commentary.

**Cochrane Database of Systematic Reviews (CDSR), Issue 4, 2002**


To determine effects of the opiate antagonist naloxone on infants with exposure or suspected exposure to narcotics for maternal labor pain relief or through maternal narcotics use in pregnancy, the reviewers analyzed data from nine methodologically adequate randomized controlled trials. Although most trials assessed the relationship between naloxone use and respiratory function in the newborn in the initial hours after birth, none assessed effects of naloxone on the review’s primary outcome measures, which were use and duration of assisted ventilation, and admission to neonatal units. The trials included in the analysis were published between 1976 and 1984, and did not seem to have restricted enrollment to infants with respiratory distress. Thus, their findings may not be relevant to current standards of naloxone use. Reviewers conclude that available trial reports do not provide data on clinically important outcomes, including possible harmful effects of naloxone, and better research is needed.

**Comment:** In the US, approximately 30% of laboring women receive parenteral opioids for labor pain relief. Although these drugs readily cross the placenta, we lack controlled trial evidence to clarify whether naloxone is a safe and effective treatment for narcotic-induced respiratory depression in newborns.

**Pregnancy and Birth**

**New**

- Magnesium sulfate for preventing preterm birth in threatened preterm labour
- Prophylactic antibiotic administration in pregnancy to prevent infectious morbidity and mortality
- Terbutaline pump maintenance therapy after threatened preterm labor for preventing preterm birth
- Vitamin A supplementation during pregnancy

**Updated**

- Drugs for treatment of very high blood pressure during pregnancy
- Prophylactic antibiotics for inhibiting preterm labour with intact membranes

**Women’s Health**

**New**

- Cervical cap versus diaphragm for contraception
- Interventions for relieving the pain and discomfort of screening mammography
- Laparoscopic surgery for subfertility associated with endometriosis
- Medical versus surgical methods for first trimester termination of pregnancy
- Nonoxynol-9 for preventing vaginal acquisition of HIV infection by women from men
- Nonoxynol-9 for preventing vaginal acquisition of sexually transmitted infections by women from men
Selective serotonin reuptake inhibitors for premenstrual syndrome
Techniques for the interruption of tubal patency for female sterilisation

Newborn Care

New

- Devices and pressure sources for administration of nasal continuous positive airway pressure (NCPAP) in preterm neonates
- Heparin for prolonging peripheral intravenous catheter use in neonates
- Mechanical ventilation for newborn infants with respiratory failure due to pulmonary disease

Updated

- Vitamin A supplementation for preventing morbidity and mortality in very low birthweight infants

Cochrane Reviews are available by subscription to The Cochrane Library or through various publishing partners (see http://www.update-software.com/Cochrane). Abstracts of all Cochrane Reviews are available without charge at http://www.cochrane.org.

DATABASE OF ABSTRACTS OF REVIEWS OF EFFECTS (DARE)


The reviewers analyzed 15 cohort studies involving 47,682 women (randomized controlled trials were not available). They found that planned vaginal birth after cesarean (VBAC) was associated with small increases in the rate of uterine rupture and in fetal and neonatal mortality compared to rates of these outcomes in women who experienced planned repeat cesarean. Planned VBAC was also associated with less maternal morbidity, including febrile morbidity and need for transfusion or hysterectomy, compared to rates of these outcomes in women who experienced planned repeat cesarean. The reviewers concluded that either VBAC or planned repeat cesarean may be a reasonable choice for women with one or more previous cesareans. Although the review meets a series of quality criteria, authors of the DARE abstract would have preferred a broader search strategy and note that use of observational studies is a limitation.

Comment: This review can help women and providers understand trade-offs between the health risks associated with cesarean birth and the health risks associated with vaginal birth for women who have previously given birth by cesarean. The results can help women make an informed choice between planned VBAC and planned repeat cesarean. A growing proportion of women who have experienced a cesarean have caregivers or hospitals that do not offer the option of VBAC for a subsequent birth. Systematic review of the best available research does not support policies of forced surgical birth for these women.

Pregnancy and Birth

- Association of Down’s syndrome and water fluoride level: a systematic review of the evidence
- A critical appraisal of the use of umbilical artery Doppler ultrasound in high-risk pregnancies: use of meta-analyses in evidence-based obstetrics

Women’s Health

- An evidence-based medicine approach to the treatment of endometriosis-associated chronic pelvic pain: placebo-controlled studies
- Hormone replacement therapy and prevention of nonvertebral fractures: a meta-analysis of randomized trials
- A rapid and systematic review of the clinical effectiveness and cost-effectiveness of topotecan for ovarian cancer
- Resistance training and bone mineral density in women: a meta-analysis of controlled trials
- Review of data describing outcomes that are used to assess changes in quality of life after reduction mammoplasty
- Risk of venous thromboembolism from oral contraceptives containing gestodene and desogestrel versus levonorgestrel: a meta-analysis and formal sensitivity analysis
- Physical activity in the primary prevention of estrogen-related cancers: is it effective?
- Taxanes for breast cancer: an evidence-based review of randomized phase II and phase III trials

DARE abstracts are available without charge at: http://agatha.york.ac.uk/darehp.htm.

CLINICAL EVIDENCE, ONLINE UPDATES BETWEEN ISSUE 7, JUNE 2002, AND ISSUE 8, DECEMBER 2002

Pregnancy and Birth

Updated

- Mother to child transmission of HIV [effects of measures to reduce transmission: antiretroviral drugs, elective cesarean birth, avoiding breastfeeding, vaginal microbiicides, immunotherapy, vitamin supplements]
- Perineal care [effects of interventions on perineal trauma: routine vs. selective episiotomy, type of episiotomy, epidural analgesia, vacuum extraction vs. forceps, labor support, position in labor, method of bearing down, hands poised vs. hands on; effects of options for repairing: first- and second-degree tears and episiotomy, third- and fourth-degree tears]
Clinical Evidence is available in online and print versions through http://www.clinicalevidence.com.

EVIDENCE-BASED REVIEWS FROM OTHER SOURCES


This review was conducted to clarify knowledge about gestational diabetes and provide guidance for screening during pregnancy. The reviewers found that the condition known as “gestational diabetes” has been poorly defined and appears to involve a continuum of risk; dichotomous definitions are inappropriate. The range of glucose intolerance primarily involves impaired glucose tolerance, rather than diabetes. Because few randomized controlled trials of screening practices were available, the review placed no restrictions on the design of included studies. The reviewers concluded that there was insufficient evidence to justify universal screening. Screening decisions should consider inconvenience and harms due to (1) high false positive rates and anxiety with available tests and, (2) high cesarean rates following diagnosis alone. The reviewers recommended highly selective screening based first on overweight and age, and also ethnicity. For those who meet these risk criteria, the reviewers recommend glucose challenge test (GCT) screening, with dietary advice as front-line treatment for women with a positive GCT, without use of a 3-hour glucose tolerance test (GTT). These are interim recommendations, and more rigorous research is needed. Comment: Available evidence raises serious doubts about “gestational diabetes” as a distinct disease entity and about benefits of liberal screening for such a condition. Liberal screening may place women at risk for adverse outcomes.


This review considered whether breastfeeding contributes to the protective effect of childbearing against breast cancer. The reviewers examined the collective experience of nearly 150,000 women in 47 case-control and cohort studies. They found that the relative risk of breast cancer was reduced by 4.3% for every 12 months that a woman breastfed, in addition to a decrease of 7.0% for each birth. The longer women breastfed, the greater was their protection against breast cancer. Lack or short lifetime duration of breastfeeding appears to contribute to the high incidence of breast cancer in developed countries. Comment: To promote child health, the American Academy of Pediatrics recommends exclusive breastfeeding until infants are about six months old, continued breastfeeding to 12 months, and breastfeeding thereafter as long as mutually desired. Extended breastfeeding may also be recommended to mothers as a preventive measure against breast cancer.

Pregnancy and Birth


Women’s Health


Newborn Care


COMMENTARY: LEVELS OF EVIDENCE

How firm are conclusions from any given study, and how useful are they for guiding policy, practice, and education?
The answer, in large part, depends on the study’s “level of evidence.” Recognition that research evidence varies widely in value has been central to the evolution of evidence-based health care. The Canadian Task Force on the Periodic Health Examination developed the concept of levels of evidence in the late 1970s to weight research results. Knowledge about the highest available level of evidence is important for assessing the value of an intervention or a test; for educating health professionals, consumers, and the general public; and for making clinical and policy decisions.

The concept of levels of evidence has been continuously refined over time. Although a number of systems are being used, the highly recommended scheme provided by the UK National Health Service Research & Development Centre for Evidence-Based Medicine (CEBM) has advantages over others. First, this scheme provides guidance for six different types of questions. In addition to the original concern about assessing effects of preventive measures and treatments, the CEBM scale also provides guidance for assessing effects of alternate drugs, prognosis, diagnosis, differential diagnosis, and economic or decision analysis. Second, the CEBM scheme considers both whether systematic reviews are available and the types of primary data study designs that are available to address a specific question. The omission of systematic reviews is a shortcoming of some widely used level of evidence scales. Third, the CEBM scheme is a work in progress. The developers welcome feedback and periodically post refinements.

The current CEBM scheme has 10 levels of evidence. At the top, offering greatest confidence in research results, are systematic reviews of randomized controlled trials with “homogeneity” (consistency in direction and degree of results, and no worrisome variations). At the bottom is “expert opinion without critical appraisal”. Intervening levels address various types of study designs, with and without systematic reviews. The top three levels are graded A, the next five are graded B, and the last two are C & D, respectively. The developers caution that these levels and grades relate only to the validity of research and not to clinical applicability. Other important considerations for clinical decision-making include: consumer values and preferences, the seriousness of the health matter at hand, costs and difficulty of carrying out the care, and available skills and resources for doing so.

REFERENCE


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