Comparative Effectiveness Research Challenges Hierarchy of Evidence


Emerging interest in comparative effectiveness research reflects a growing understanding that data on efficacy of therapies from controlled trials are not sufficient to understand their full range of effects in uncontrolled settings and diverse patient populations in which they are used.

Randomized controlled trials (RCTs), the gold standard for clinical research, are the best available tool to discern efficacy. Randomization and the careful control of study conditions reduce spurious inferences about effects that arise due to chance, bias, and confounding. However, these very attributes prevent RCTs from providing information about all harms and benefits of treatments, how they affect specific patients, how they perform over time under normal circumstances, or how they compare to available alternatives.

For decision makers, it is not enough to know whether a treatment can work under restricted conditions. Equally important is whether it will work in routine practice, for whom, at what cost, and with what benefits and harms. Comparative effectiveness research combines information from various sources: observational studies using methods to increase validity and reduce bias, clinical and administrative data bases, and new experimental designs, with the data derived from RCTs. This approach provides information relevant to health care decision makers. The AHRQ symposium articles summarize these issues and report on innovative approaches to comparative effectiveness research.

From Cochrane Database of Systematic Reviews (CDSR), Issue 3, 2007

New Systematic Reviews

- Behavioural interventions for primary and secondary dysmenorrhoea
- Diet or exercise, or both, for weight reduction in women after childbirth
- Home-based support for disadvantaged adult mothers
- Home-based support for disadvantaged teenage mothers
- Interventions for reducing anxiety in women undergoing colposcopy
- Oxytocin agonists for preventing postpartum haemorrhage
- Progestogen for treating threatened miscarriage
- Subdermal implantable contraceptives versus other forms of reversible contraceptives or other implants as effective methods of preventing pregnancy
- Traditional birth attendant training for improving health behaviours and pregnancy outcomes

Updated Systematic Reviews

- Combined spinal-epidural versus epidural analgesia in labour
- Continuous support for women during childbirth
- Danazol for heavy menstrual bleeding
- Early skin-to-skin contact for mothers and their healthy newborn infants
- Individual or group antenatal education for childbirth or parenthood, or both
- Modern combined oral contraceptives for pain associated with endometriosis
- Ovulation suppression for endometriosis
- Prophylactic antibiotics to reduce mortality and morbidity in ventilated newborn infants
- Prostaglandins for preventing postpartum haemorrhage
- Repeat doses of prenatal corticosteroids for women at risk of preterm birth for preventing neonatal respiratory disease
• Surfactant for meconium aspiration syndrome in full term/near term infants
• Surgical management of pelvic organ prolapse in women

Cochrane Reviews are available by subscription to The Cochrane Library, and review abstracts are available without charge (see http://www.thecochranelibrary.com).

From Database of Abstracts of Reviews of Effects (DARE)

Recent Abstract Entries Assessing Quality of Systematic Reviews
• Aerobic exercise and lipids and lipoproteins in women: a meta-analysis of randomized controlled trials
• An integrated review of the literature on demand feedings for preterm infants
• A systematic review of mammography educational interventions for low-income women
• Cognitive-behavioral therapy for bulimia nervosa: an empirical analysis of clinical significance
• Does scientific evidence support the use of non-prescription supplements for treatment of acute menopausal symptoms such as hot flushes?
• Effectiveness and safety of ginger in the treatment of pregnancy-induced nausea and vomiting
• Effects of brief exposure to water, breast-milk substitutes, or other liquids on the success and duration of breastfeeding: a systematic review
• Formula supplemented with docosahexaenoic acid (DHA) and arachidonic acid (ARA): a critical review of the research
• Heat loss prevention: a systematic review of occlusive skin wrap for premature neonates
• Impact of first-stage ambulation on mode of delivery among women with epidural analgesia
• Lifestyle interventions to prevent osteoporotic fractures: a systematic review
• Misoprostol compared with prostaglandin E2 for labour induction in women at term with intact membranes and unfavourable cervix: a systematic review
• Thrombophilic abnormalities, oral contraceptives, and risk of cerebral vein thrombosis: a meta-analysis

DARE abstracts are available without charge from: http://www.york.ac.uk/inst/crd/crddatabases.htm#DARE

Evidence-Based Reviews From Other Sources


The authors conducted a meta-analysis of individual patient data from 31 RCTs evaluating antiplatelet agents for prevention of preeclampsia. Most women were at low to moderate risk for preeclampsia and, for 98%, low-dose aspirin was the agent studied. Women taking antiplatelet agents had a 10% risk reduction for pre-eclampsia, preterm birth less than 34 weeks, and serious adverse pregnancy outcome. Use of antiplatelet agents did not alter risk of bleeding events for mothers or infants; however, this outcome was sensitive to the definition of postpartum hemorrhage used. The number of subjects with specific risk factors was underpowered to show a difference in effect in any high-risk group.

Comment: Hypertensive disorders of pregnancy account for 10% to 15% of maternal deaths worldwide, and resulting placental damage has been implicated in preterm birth and perinatal mortality. A moderate, consistent reduction in risk with no evidence of increased harm was associated with antiplatelet therapy during pregnancy.


A systematic review of studies in English from 1966 to 2006 summarizes patients’ experiences with hospital caregivers following the death of a fetus or newborn. Losses occurred between 14 weeks gestation and 1 month postpartum in U.S. hospitals. The goal was to determine which behaviors and comments were most helpful and which were most distressing to parents. In general, nurses were perceived as more emotionally supportive than physicians or other staff. Distressing events frequently reported included caregivers being unaware of the death, avoiding the family, making thoughtless comments, treating the body carelessly, or being emotionally distant. Positive responses frequently reported included open communication, expressions of physical and emotional caring, respectful handling of the body, consistency of information, and education about the cause of death and the grieving process.

Comment: Due to the traumatic nature of perinatal loss, small acts and comments have significant and persistent emotional impact on grieving parents. There is support for health professional education in bereavement to minimize secondary emotional trauma to families experiencing a perinatal death.

The authors reviewed Cochrane reviews of IUD trials and summarized the findings. The T380A was the most effective copper-containing device. The levonorgestrel LNG-20 was comparable in efficacy to IUDs containing greater than or equal to 250-mm² surface area of copper. Insertion immediately postpartum or following abortion was safe and effective but may entail higher expulsion rates; however, RCTs are not available for validation. NSAIDs were effective in reducing bleeding and pain, but prophyllactic use had no effect on continuation rates. Except in settings with high prevalence of sexually transmitted infections, prophyllactic antibiotics had no effect on incidence of salpingitis. The one RCT comparing IUD with no treatment for emergency contraception found pregnancy risk significantly lowered with IUD use. The levonorgestrel IUD was superior to oral progestins and comparable to endometrial ablation for the treatment of heavy uterine bleeding.

Comment: IUD usage rates are lower in the United States than worldwide. Despite evidence that they are safe and effective for most women, only 2% of American women use IUDs for contraception compared with 15% in Europe.

Recent Evidence-Based Reviews


