Evidence-Based Neonatal Medicine

Presented by:
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Learning Objectives:

- Help participants develop self-directed life-long learning skills, motivating them to seek further learning when there are questions.
- Search and identify relevant evidence-based, point-of care resources in neonatal-perinatal medicine.
- Introduce the concept of Evidence-Based Medicine (EBM), demonstrating simple methods to find and use the best evidence to answer clinical questions.
- Search medical databases (PubMed and Cochrane Library) effectively and efficiently to track down the best evidence.
- Evaluate the evidence for relevance and validity.
- Take the skills you learn and apply it to your medical education, clinical research, and patient management.
Part I Agenda: Search Techniques (1st hour)

1. Review UCI Libraries’ Resources and services
   - Grunigen Medical Library (GML) Core Resources page
   - ANTPAC for resources on Neonatal Medicine
   - Evidenced-Based, Point-of-Care Resources in Neonatal Medicine

2. Perform searches of medical databases (PubMed and the Cochrane Library)

3. Download and configure the VPN software (http://www.oit.uci.edu/vpn/) for Remote Access to the UCI Libraries restricted online resources
UCI Libraries’ Resources & Services --
GML Core Resources on Neonatology

- ANTPAC Catalog (the UCI Libraries online catalog)
- Access Surgery - Books
- jove (articles with videos)
- Micromedex
- VisualDx

Literature searches
- PubMed@UCI
- Cochrane Library
- Google Scholar

EB Point-of-Care Resources:
- BMJ Best Practice
- JAMA Evidence
- NEJM Journal Watch

Evidence-Based Neonatal Medicine
Evidence-Based Neonatology Resources
Endotracheal intubation AND (neonates OR newborns OR infants)

Search Endotracheal intubation AND (neonates OR newborns OR infants) across all McGraw-Hill Medical sites

8 results in Textbooks

- Airway Management > INTUBATING WITH A LARYNGEAL MASK AIRWAY
  Principles of Critical Care, 4e
  ... and 5, and is designed to facilitate tracheal intubation with endotracheal tubes up to 8-mm inside diameter. Intubation can be performed blindly or in case of difficulty with the help of flexible bronchoscopy. Like the classic LMA, the Fastrach™ establishes ventilation when face mask ventilation...

- Congenital Heart Disease > Treatment
  Schwartz’s Principles of Surgery, 10e
  ... Figure 20-3. Treatment algorithm for neonates and infants with critical left ventricular outflow tract obstruction. Patients can be initially triaged to either a single- or a biventricular approach depending on presenting morphologic, demographic, and institutional factors. VSD...

- Abdominal Wall Defects: Omphalocele and Gastrochisis > Silo Placement with Staged Closure
  Operative Pediatric Surgery
  ... the top down, taking care not to exert high pressure (Fig. 34-8). The silo placement and reduction is usually performed in the neonatal intensive care unit (NICU) under sedation, thus intubation is not required. When the contents are completely reduced, the silo is removed and the fascial defect closed...
Use Antpac to locate all the Books, journals, videos and other reports that are in print and online: http://antpac.lib.ucl.edu/

Search examples:
- necrotizing enterocolitis (include all collection)
- neonatology management (Online/Internet Resources)
- Neonat* Case* (Online/Internet)
Chapter 20: Prognosis

Adrienne G. Randolph, Deborah J. Cook, Gordon Guyatt

Clinical Scenario

You are a pediatrician expecting to see an infant who was born at 26 weeks’ gestation tomorrow for her first outpatient clinic visit at 4 months after birth. You know the family well because you care for their older child who was born at 36 weeks’ gestation and is now a healthy 3-year-old girl. This infant had a prolonged stay in the neonatal intensive care unit but required relatively minimal respiratory support during her first 3 weeks of life. The neonatologist told you that the infant did extremely well, experiencing none of the complications that often occur in extremely preterm infants. He also informs you that he warned the family, “Your baby is at risk for long-term neurocognitive and motor complications related to being born so prematurely. Although some babies born this prematurely grow up to lead normal lives, many have minor disabilities, and there is a nontrivial chance that your baby could develop moderate to severe disabilities.” You have 5 other children in your pediatric practice born at less than 27 weeks of gestation, all of them have major neurodevelopmental problems. On the basis of your professional experience, you wonder if the neonatologist has presented the family with an overly optimistic outlook. You decide to check out the evidence for yourself.

Finding the Evidence

You use your clinic's free Internet connection to access MEDLINE at the National Library of Medicine website via PubMed. To find the appropriate search terms for your population of interest, you first type “premature” in the Medical Subject Headings database and find that there is a term called “Infant, Extremely Premature” defined as a human infant born before 26 weeks’ gestation. You select it and click on the related link for Clinical Queries. Under Clinical Study Categories, you choose the search filter “Prognosis” and limit the scope to “Infant.” This retrieves 21 clinical studies and 8 potential reviews. You first look for a systematic review but do not find one that is relevant for evaluating outcomes across medical specialties, premature infants overall, because the search results are too narrow. The second most promising study is the...
Whole-Body Hypothermia for Neonatal Hypoxic-Ischemic Encephalopathy


Hypoxic-ischemic encephalopathy (HIE) may cause neurodevelopmental deficits and death in infants. The rate of HIE in the US (2 per 1000 live births) has not changed in the past 20 years. Researchers exposed whole-body cooling in a multiple, randomized trial that involved 200 newborns (gestational age 33-36 weeks) with HIE (defined as either severe acidosis or perinatal complications and resuscitation at birth). Within 6 hours of birth, infants received either usual care (overhead radiant warmer) or whole-body cooling (with water blankets regulated to achieve an esophageal temperature of 33.5°C) for 72 hours.

Compared with infants who received usual care, those who underwent cooling were significantly less likely to have died or have moderate or severe disability (collective rates of ID, motor function, blindness, and hearing impairment) at age 18 to 22 months (44% vs. 62%). Adjustment for severity of encephalopathy at randomization did not change the results. Individual rates of cerebral palsy, blindness, and hearing impairment among survivors did not differ significantly between the two groups. The incidence of serious adverse events (e.g., hypotension, cardiac arrhythmia, or oliguria) was similar in the two groups.

**COMMENT**

Howard Bauchner, MD

These encouraging results suggest that whole-body cooling may be an effective therapy for hypoxic-ischemic encephalopathy in term and asphyxiated infants. In a previous randomized study of brain cooling for HIE, no differences in rates of death and disability were found. As noted by an editorialist, one explanation for the different results is that systemic whole-body hypothermia resulted in more rapid cooling than brain cooling alone. Unfortunately, many neonates with HIE are born in community hospitals, where quickly instituting such an intensive intervention as whole-body cooling may be difficult to accomplish. In addition, these results do not apply to premature infants.

Therapeutic Hypothermia in Perinatal Encephalopathy: Do Depth and Duration of Cooling Matter?

Robbin Swainboro, MD reviewing Shankaran S et al. JAMA 2014 Dec 24/1: 312:2829

Cooling infants for 120 versus 72 hours, at 32.0°C versus 33.5°C, or both did not improve outcomes.

Results of several trials have established that 72 hours of therapeutic hypothermia at 33°C to 34°C reduces neurodevelopmental disability for term and near-term infants with moderate or severe encephalopathy. However, half of all children who are cooled still die or survive with impairments, which has led to interest in optimizing the method of cooling.

In the current study, investigators enrolled 364 infants who met standard criteria for cooling (perinatal acidosis and clinical findings of encephalopathy). Using a 2×2 factorial design, infants were randomized to a cooling temperature of 33.5°C or 32.0°C and to a cooling duration of 72 hours or 120 hours. The study ended after enrollment of 364 neonates at the recommendation of the data and safety monitoring committee.

In-hospital mortality rates were 7% in the group cooled at a standard 33.5°C for 72 hours (7 of 95 neonates), 14% in those cooled at 32.0°C for 72 hours (13 of 99 neonates), 16% in those cooled at 33.5°C for 120 hours (16 of 99 neonates), and 17% in those cooled at 32.6°C for 120 hours (14 of 83 neonates). Rates of nitric oxide use and extracorporeal membrane oxygenation (ECMO) use were significantly higher in infants cooled at 32.0°C, indicating a higher rate of pneumonia and hypothermia in this group. Long-term outcomes remain under investigation.

**COMMENT**

Term and near-term neonates with moderate to severe hypoxic ischemic encephalopathy do not benefit from deeper cooling or longer duration of cooling compared with hypothermia at 33.5°C for 72 hours. The higher rates of nitric oxide and ECMO in infants cooled to 32.0°C indicate that a tight therapeutic range of temperature is important to cardiorespiratory stability. Future studies will likely focus on adjunctive therapies to augment the effects of therapeutic hypothermia.

Dr. Steinherz is Professor and Chair of Pediatrics, University of California Davis Medical Center, Sacramento.

**CITATION(S)**:


Published abstract cited.
Assessment and Evaluation of the High Risk Neonate: The NICU Network Neurobehavioral Scale

JoVE (Journal of Visualized Experiments)
VisualDx: A Differential Diagnostic Tool

Neonatal Acne

Neonatal Dacryocystitis

Neonatal Candidiasis

Idiopathic Neonatal Hepatitis

Neonatal Candidiasis - Skin

Synopsis

Neonatal candidiasis can develop perinatally or postnatally. It can be acquired by passage through an infected birth canal, develop postnatally from invasive procedures or infected catheters, or be related to breaches in the skin of the nipples, as is seen after the first week of life. In contrast to congenital candidiasis, which is present at birth.

Affected infants may present with a varying clinical picture.

Localized disease

Localized disease is limited to the development of mucocutaneous lesions and usually presents as thrush or diaper dermatitis, but other benign areas may be involved.

Systemic infection

A more widespread systemic infection occurs mostly in low birth weight infants. Cutaneous findings include diffuse erythema, vesicles, or pustules. The infant is lethargic, refuses to feed, is anorexic, and is in respiratory distress. There is temperature instability and hypoglycemia. Leukocytosis, decreased bilirubin, or candidal endocarditis may occur. More severe cases may result in multi-organ failure.

Widespread cutaneous infection

The development of a widespread cutaneous candidal infection that resembles an erosive dermatitis may also be seen in extremely low birth weight infants. Risk factors for the development of this type of neonatal candidiasis include prematurity, obstetrical surgery, intravenous catheterization, and broad spectrum antibiotics use as well as nystatin administration and hypoglycemia. Infants with widespread cutaneous involvement can present with mucosal, papular, vesicular, or purpuric lesions. Erosive and ulcerative lesions develop with most fatalities.

Codes

https://www.vescalab.com/visualdx/diagnostics/conditions/neonatal-diabetes-glucose-35008
Micromedex 2.0: A Comprehensive Drug Information Tool

7 results found for: "Neonatal bradycardia"

1. **SALICYLATES**
   - **Toxicology:** Detailed evidence-based information (POISINDEX® Managements)
   - Findings after resuscitation included tachypnea, respiratory distress, hypotonia, and metabolic...  
   - Document section:
     - CLINICAL EFFECTS

2. **BISMUTH**
   - **Drug:** Detailed evidence-based information (DRUGDEX®)
   - Findings after resuscitation included tachypnea, respiratory distress, hypotonia, and metabolic...  
   - Document section:
     - Teratogenicity/Effects in Pregnancy/Breastfeeding

3. **Antacids**
   - **Drug:** Detailed evidence-based information (DRUGDEX®)
   - Findings after resuscitation included tachypnea, respiratory distress, hypotonia, and metabolic...  
   - Document section:
     - Teratogenicity/Effects in Pregnancy/Breastfeeding

4. **PINDOLOL**
   - **Drug:** Detailed evidence-based information (DRUGDEX®)
   - Findings after resuscitation included respiratory depression, hypopnea, bradycardia, and low Apgar scores have also been...

Virtual Private Network (VPN)

Summary: If you need to connect to UCInet from off campus, Virtual Private Network (VPN) may be the solution for you. VPN allows you to connect to on campus-only resources like the Library and encrypts the information you are sending over the network, protecting your data.

Peer-to-peer file sharing services and other high-bandwidth applications should not be used while using the VPN service. You may be automatically blocked from using the VPN if your bandwidth exceeds the maximum bandwidth limit.

3 Ways to Access the VPN

VPN Software Versions
- iOS – iPhone, iPod Touch, iPad
- Android 4.x
- Chrome OS – ChromeBook

Need Help
- Call Us – (949) 824-2222
- Email Us – oit@uci.edu
- Self Service
- Help Desk
- Knowledgebase
Finding the Best Available Evidence
Why Searching PubMed@UCI?

- A free resource that provides access to MEDLINE, the National Library of Medicine database of citations and abstracts in the fields of medicine, nursing, dentistry, veterinary medicine, health care systems, and preclinical sciences.

- Provides direct access to full-text articles via UC-eLinks.
  1. Go to the Grunigen Medical Library (http://grunigen.lib.uci.edu/)
  2. Select PubMed@UCI located under Core Resources.

- Must go through VPN (requires software download and configuration) and login with your UCInetID and password when access remotely (http://www.oit.uci.edu/vpn).

- Brief online tutorials are available at: https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html
PubMed Search Tips

- You **MUST** access PubMed through the UCI Library website.
- Capitalize Boolean connectors in PubMed (**AND**, **OR**, **NOT**).
- Avoid prepositions, or other minor parts of speech as search terms.
- Avoid acronyms, initialisms, and other abbreviations as search terms.
- Avoid imprecise search terms, e.g., increased, better, greater, less, worse, vs., etc.
- Review the PubMed Quiz ([https://eee.uci.edu/quiz/PubMed](https://eee.uci.edu/quiz/PubMed))
Asking a Structured and Focused Clinical Question

*Is Paracetamol as effective as indomethacin in closure of PDA in preterm neonates?*

**PICO:**
- **P** = preterm neonates
- **I** = paracetamol
- **C** = indomethacin / ibuprofen
- **O** = closure of PDA

Submitted search strategy:

*Paracetamol vs. ibuprofen for PDA treatment*

*Results: 2*
PubMed vs. PubMed Clinical Queries

Regular PubMed search

(pda OR Patent Ductus Arteriosus) AND (paracetamol OR Acetaminophen) AND (indomethacin OR ibuprofen OR Anti-Inflammatory Agents, Non-Steroidal OR NSAIDs) AND (Neonatal Prematurity OR premature infants OR infant, premature OR preterm infants)

Results: 31

Filters: Randomized Controlled Trial; English

Results: 4 RCTs

PubMed Clinical Queries search

(Therapy/Narrow[filter]) AND ((pda OR Patent Ductus Arteriosus) AND (paracetamol OR Acetaminophen) AND (indomethacin OR ibuprofen OR Anti-Inflammatory Agents, Non-Steroidal OR NSAIDs) AND (Neonatal Prematurity OR premature infants OR infant, premature OR preterm infants))

Filters: English

Results: 5 RCTs.
Oral paracetamol vs. oral ibuprofen in the treatment of symptomatic patent ductus arteriosus in premature infants: A randomized controlled trial.

Yeung Y.1,2, Li A.1,2, Yuen Y.1,2, Zhang Q.1

Author information

Abstract

The aim of the present study was to analyze the changes of plasma and urinary prostaglandin E2 (PGF2α) levels in preterm infants with symptomatic patent ductus arteriosus (sPDAs) treated with oral ibuprofen and acetaminophen. A total of 87 preterm infants with sPDAs admitted to the Neonatal Ward of the Affiliated Zhongshan Hospital of Medical College of Southeast University from October, 2012 to June, 2015 were selected and randomly divided into the ibuprofen group (n=43) and acetaminophen group (n=44). 10 mg/kg ibuprofen was administered orally as initial dose, followed by 5 mg/kg during the first 24 and 48 h (lag time) and acetaminophen (n=44, 15 mg/kg acetaminophen orally once every 6 h for three days). The levels of plasma and urinary PGF2α in the two groups were estimated before and after treatment. The treatment of sPDAs infants with ibuprofen (group ibuprofen) or acetaminophen (acetaminophen group) caused a significant decrease in plasma and urinary PGF2α levels in comparison with plasma and urinary PGF2α levels before treatment (P<0.05). Furthermore, plasma and urinary PGF2α levels in the acetaminophen group (46.3±6.9 ng/ml) were significantly lower than those in the ibuprofen group (73.5±4.8 ng/ml, P<0.002). The arterial duct closure rate was similar among the acetaminophen group (71.5±5.6%) and ibuprofen group (78.7±5.0%, P=0.506). The incidence of oliguria was less among sPDAs infants of the acetaminophen group (2.2%) than observed among the sPDAs infants of the ibuprofen group (6.4%). However, this difference was not statistically significant (P=0.108). Additionally, the incidences of febrile oral blood pressure positive, intraventricular hemorrhage, neonatal necrotizing enterocolitis and bronchopulmonary dysplasia were distributed similarly in the ibuprofen and acetaminophen groups (P=0.05). The levels of platelet, serum creatinine and albumin transaminases showed no significant changes between the ibuprofen and acetaminophen groups (P=0.05). Following treatment with ibuprofen or acetaminophen, the extent of decrease of plasma and urinary PGF2α was significantly higher among sPDAs infants with oliguria (135±3.0 ng/ml) than that observed in sPDAs infants without oliguria (82±3.7 ng/ml, P=0.01). The study also found a significant correlation between plasma and urinary PGF2α levels (r=0.48, P<0.05) and the coefficient of variation of urinary PGF2α (0.47) was less than 0.50. The clinical efficacy of oral ibuprofen and acetaminophen in the treatment of sPDAs with similar low adverse events whereas acetaminophen-induced PGF2α levels were less than the levels observed in the ibuprofen-treated group. The incidence of oliguria was also lower in the acetaminophen group compared to the ibuprofen group. In addition, monitoring urinary PGF2α levels was more beneficial for its non-invasiveness in the clinical monitoring of plasma PGF2α in preterm infants with sPDAs.

Keywords: acetaminophen; ibuprofen; infant; patent ductus arteriosus; preterm; prostaglandin E2
Title: Oral paracetamol versus oral ibuprofen in the management of patent ductus arteriosus in preterm infants: a randomized controlled trial.

Objective
To compare the efficacy and safety of oral paracetamol and oral ibuprofen for the pharmacological closure of patent ductus arteriosus (PDAs) in preterm infants.

Study design
This prospective, randomized, controlled study enrolled 90 preterm infants with gestational age ≥ 36 weeks, birthweight ≥ 2500 g, and postnatal age ≥ 6 hours who had an echocardiographically confirmed significant PDA. Each enrolled patient received either oral paracetamol (15 mg/kg every 8 hours for 3 days) or oral ibuprofen (initial dose of 10 mg/kg, followed by 5 mg/kg at 24 and 48 hours).

Results
Spontaneous closure rate for the entire study group was 44%. After the first course of treatment, 14 PDA closed in 31 (77.5%) of the patients assigned to the oral ibuprofen group vs 29/39 (74.4%) of the patients assigned to the oral paracetamol group (P = .6). The re-opening rate was higher in the paracetamol group than in the ibuprofen group, but the difference was not statistically significant (24.1% [7 of 29] vs 16.1% [5 of 31], P = .43). The cumulative closure rates after the second course of drugs were high in both groups. Only 2 patient (2.5%) in the paracetamol group and 3 patients (5%) in the ibuprofen group required surgical ligation.

Conclusion
This randomized, controlled clinical study compared oral paracetamol with ibuprofen in.
The Cochrane Database of Systematic Reviews contains critical analyses of multiple clinical studies that are peer-reviewed, prepared and supervised by a Cochrane Review Group according to strict guidelines.

The Database of Abstracts of Reviews of Effects (Other Reviews) contains abstracts of systematic reviews that have been quality-assessed. NOTE: this database has not been updated since Mar 2015.
Click on the + sign will bring up additional search boxes.
Cochrane Database of Systematic Reviews: Issue 2 of 12, February 2017

There are 12 results from 9750 records for your search on (pda OR Patent Ductus Arteriosus) in Title, Abstract, Keywords and (preterm birth OR preterm infants OR premature infant) and (paracetamol OR Acetaminophen OR indomethacin) in Title, Abstract, Keywords in Cochrane Reviews.

- **Paracetamol (acetaminophen) for patent ductus arteriosus in preterm or low-birth-weight infants**
  Arne Ohlsson and Prakeshkumar S Shah
  Online Publication Date: March 2015

- **Prolonged versus short course of indomethacin for the treatment of patent ductus arteriosus in preterm infants**
  Carmen M. Herrera, James R Hollier and Peter G Davis
  Online Publication Date: April 2007

- **Ibuprofen for the treatment of patent ductus arteriosus in preterm or low birth weight (or both) infants**
  Arne Ohlsson, Rajneesh Walia and Sachin S Shah
  Online Publication Date: February 2015
In very low birthweight infants, does using non-invasive ventilation at the time of delivery decrease the probability of chronic lung disease compared to similar patients who are intubated in the delivery and given surfactant?

**PICO:**
- **P** = very low birthweight infants
- **I** = Non-Invasive ventilation in the delivery room
- **C** = Intubation and surfactant in the delivery room
- **O** = Chronic lung disease

**Submitted search strategy:**
- very low birth weight premature infants AND non invasive
  - Results: 57
PubMed vs. PubMed Clinical Queries

Regular PubMed Search
(noninvasive ventilation OR non invasive ventilation) AND (respiratory distress syndrome OR long disease OR respiratory diseases) AND (low birth weight OR very low birth weight OR extremely low birth weight OR preterm infants OR preterm infant OR infant prematurity)
Results: 229
Filters: Randomized Controlled Trial; published in the last 5 years; English
Results: 21

PubMed Clinical Queries
(Therapy/Narrow[filter]) AND (noninvasive ventilation OR non invasive ventilation) AND (respiratory distress syndrome OR long disease OR respiratory diseases) AND (low birth weight OR very low birth weight OR extremely low birth weight OR preterm infants OR preterm infant OR infant prematurity)
Filters: published in the last 5 years; English
Results: 23 RCTs
Cochrane Database of Systematic Reviews: Issue 2 of 12, February 2017

Issue updated daily throughout month.

There are 7 results from 9750 records for your search on 'Very Low Birth Weight OR Extremely Low Birth Weight OR preterm infant' AND (noninvasive ventilation or non invasive ventilation) AND (respiratory distress syndrome OR long disease OR respiratory diseases) in Title, Abstract, Keywords in Cochrane Reviews.

Select all | Export all | Export selected

- High flow nasal cannula for respiratory support in preterm infants
  Dominic Wilkinson, Chad Andersen, Colin PF O'Donnell, Antonio G De Paoli and Brett J Manley
  Online Publication Date: February 2016

- Continuous sedating pressure for respiratory distress in preterm infants
  Jacqueline J Ho, Prema Subramaniam and Peter G Davis
  Online Publication Date: July 2015

- Positioning for acute respiratory distress in hospitalised infants and children
  Donna Gilles, Deborah Wells and Abhishta P Bhandan
  Online Publication Date: July 2012

- Intra-amniotic surfactant for women at risk of preterm birth for preventing respiratory distress in newborns
  Mohamed E Abdel-Latif, David A Osborn and Daniel Challis
  Online Publication Date: January 2010
Are preterm infants with PDA treated with paracetamol have better outcomes (rate of closure and morbidities) compared to preterm infants treated with indomethacin?

**PICO:**

P = premature infant with PDA  
I = paracetamol  
C = indomethacin  
O = PDA closure rate and morbidity

Submitted search strategy:  
Paracetamol vs. ibuprofen for PDA treatment  
Results: 3
PubMed vs. PubMed Clinical Queries

Regular PubMed search

(pda OR Patent Ductus Arteriosus) AND (paracetamol OR Acetaminophen) AND (indomethacin OR ibuprofen OR Anti-Inflammatory Agents, Non-Steroidal OR NSAIDs)

Results: 50

Filters: Randomized Controlled Trial; English

Results: 4

PubMed Clinical Queries

(Therapy/Narrow[filter]) AND (pda OR Patent Ductus Arteriosus) AND (paracetamol OR Acetaminophen) AND (indomethacin OR ibuprofen OR Anti-Inflammatory Agents, Non-Steroidal OR NSAIDs) Filters: English

- Results: 5 RCT
Asking a Structured and Focused Clinical Question

**In full-term infants, what is the efficacy of hypothermia for improving neurodevelopmental outcome after hypoxic ischemic encephalopathy?**

**PICO:**

**P** = Term infants with hypoxic ischemic encephalopathy

**I** = Hypothermia

**C** = No cooling

**O** = Better Neurodevelopmental outcome

**Submitted search strategies:**

- Neurodevelopment in infant with hypothermia treatment  -- Results: 22
- Role of hypothermia in neonatal asphyxia AND neurodevelopment outcome - results: 3
- What is the efficacy of hypothermia for improving neurodevelopment outcome after hypoxic ischemic encephalopathy? Randomized control trial - Results: 0
PubMed vs. PubMed Clinical Queries

Regular PubMed search

(Therapeutic hypothermia OR targeted temperature management OR Hypothermia/therapeutic use OR hypothermia/induced) AND (hypoxic ischemic encephalopathy OR Hypoxia-Ischemia, Brain OR Brain Hypoxia Ischemia OR HIE OR Asphyxia neonatorum) AND (term birth OR full-term birth OR full-term infants OR full-term newborns OR newborn infant) AND (neurodevelopmental OR neurodevelopment OR developmental disabilities OR disability evaluation OR neurological outcomes)

Filters: published in the last 5 years; English

Results: 105

PubMed Clinical Queries

(Therapy/Narrow[filter]) AND (Therapeutic hypothermia OR targeted temperature management OR Hypothermia/therapeutic use OR hypothermia/induced) AND (hypoxic ischemic encephalopathy OR Hypoxia-Ischemia, Brain OR Brain Hypoxia Ischemia OR HIE OR Asphyxia neonatorum) AND (term birth OR full-term birth OR full-term infants OR full-term newborns OR newborn infant) AND (neurodevelopmental OR neurodevelopment OR developmental disabilities OR disability evaluation OR neurological outcomes)

Filters: published in the last 5 years; English

Results: 22 RCTs
Cochrane Database of Systematic Reviews: Issue 2 of 12, February 2017

There are 7 results from 9750 records for your search on "(Therapeutic hypothermia OR targeted temperature management OR Hypothermia OR Hypothermia therapeutic use OR hypothermia induced) in Title, Abstract, Keywords and (hypoic ischemic encephalopathy OR Hypoxia-Ischemia, Brain OR Brain Hypoxia-Ischemia OR HIE OR Asphyxia neonatorum) in Title, Abstract, Keywords and (neurodevelopmental OR neurodevelopmental OR developmental disabilities OR disability evaluation OR neurological outcomes) in Title, Abstract, Keywords and (term birth OR full-term birth OR full-term infants OR full-term newborns OR newborn infant) in Cochrane Reviews"

Select all | Export all | Export selected

- Cooling for newborns with hypoxic ischaemic encephalopathy
  Susan E Jacobs, Marie Berg, Rod Hunt, William O Tarnow-Mordi, Terrie E Inder and Peter G Davis
  Online Publication Date: January 2013

- Prophylactic barbiturate use for the prevention of morbidity and mortality following perinatal asphyxia
  Leslie Young, Marie Berg and Roger Soll
  Online Publication Date: May 2016

- Erythropoietin for term and late preterm infants with hypoxic ischemic encephalopathy
  Zhangbin Yu, Xirong Guo, Shuping Han, Junjie Lu and Qing Sun
  Online Publication Date: January 2010
Asking a Structured and Focused Clinical Question

*Does probiotic administration in Very Low Birth Weight (VLBW) infants reduce the incidence of Necrotizing Enterocolitis (NEC) when compared to placebo?*

**PICO:**

- **P** = VLBW Infants
- **I** = Probiotic
- **C** = Placebo
- **O** = Incidence of NEC

Submitted search strategies:

- ((very low birth weight infants) AND probiotic) AND incidence of Necrotizing enterocolitis
  - Results: 72
PubMed vs. PubMed Clinical Queries

Regular PubMed search
(Very Low Birth Weight OR Extremely Low Birth Weight OR preterm infants OR preterm infant OR infant prematurity) AND (Necrotizing Enterocolitis OR NEC) AND (Probiotics OR Probiotic)

Results: 282

PubMed Clinical Queries
Search (Therapy/Narrow[filter]) AND ((Very Low Birth Weight OR Extremely Low Birth Weight OR preterm infants OR preterm infant OR infant prematurity) AND (Necrotizing Enterocolitis OR NEC) AND (Probiotics OR Probiotic)) Filters: published in the last 5 years; English

- Results: 34
Cochrane Database of Systematic Reviews : Issue 2 of 12, February 2017

Issue **updated daily** throughout month

There are 2 results from 9750 records for your search on '((Very Low Birth Weight OR Extremely Low Birth Weight) AND (Necrotizing Enterocolitis OR NEC) AND (Probiotics OR Probiotic)) in Title, Abstract, Keywords in Cochrane Reviews'

**Select all** | **Exclude all** | **Exclude selected**

1. **Oral lactoferrin for the prevention of sepsis and necrotizing enterocolitis in preterm infants**
   Mohan Pammi and Steven A Abrams
   Online Publication Date: February 2015

2. **Probiotics for prevention of necrotizing enterocolitis in preterm infants**
   Khalid AlFaieh and Jasim Anabrees
   Online Publication Date: April 2014
Asking a Structured and Focused Clinical Question

What is the effect of early low-dose hydrocortisone on survival without BPD in extremely preterm infants?

**PICO:**

P = Extremely preterm infants  
I = Early low dose hydrocortisone  
C = Placebo  
O = Survival without bronchopulmonary dysplasia

Submitted search strategies:  
Early low dose hydrocortisone AND bronchopulmonary dysplasia  
Results: 15
PubMed vs. PubMed Clinical Queries

Regular PubMed search
(bronchopulmonary dysplasia AND hydrocortisone AND (Infant, Extremely Premature OR extremely premature infants OR Extremely preterm infant OR Child OR Children))
Results: 34

PubMed Clinical Queries
(Therapy/Narrow[filter]) AND (bronchopulmonary dysplasia AND hydrocortisone AND (Infant, Extremely Premature OR extremely premature infants OR Extremely preterm infant OR Child OR Children )) Filters: English
Results: 10 RCTs
Postnatal hydrocortisone for preventing or treating bronchopulmonary dysplasia in preterm infants: a systematic review

(Structured abstract)

Centre for Reviews and Dissemination
Original Author(s): Doyle LW, Ehrenkranz RA and Halliday HL
Neonatology, 2010, 98(2), 111-117
What is the efficacy of prophylactic indomethacin used for prevention of IVH in extremely low birth weight infants?

**PICO:**

- **P:** Extremely low birth weight infants
- **I:** prophylactic indomethacin
- **C:** no prophylactic treatment
- **O:** prevention of IVH

**Submitted search strategies:**

IVH AND Indomethacin AND Prophylaxis AND Randomized controlled trial

Filters: Publication date from 1990/01/01 to 2017/12/31

Results: 17
PubMed vs. PubMed Clinical Queries

Regular PubMed search
(intraventricular hemorrhage OR Cerebral Hemorrhage OR IVH) AND (prophylactic OR prophylaxis) AND (Indomethacin OR Indometacin) AND (Infant, Extremely Low Birth Weight OR Extremely very Birth Weight Infants) Results: 28

PubMed Clinical Queries
(Therapy/Narrow[filter]) AND (intraventricular hemorrhage OR Cerebral Hemorrhage OR IVH) AND (prophylactic OR prophylaxis) AND (Indomethacin OR Indometacin) AND (Infant, Extremely Low Birth Weight OR Extremely very Birth Weight Infants) Filters: English Results: 5 RCTs

(Therapy/Narrow[filter]) AND (intraventricular hemorrhage OR Cerebral Hemorrhage OR IVH) AND (prophylactic OR prophylaxis) AND (Indomethacin OR Indometacin) Filters: published in the last 10 years; English Results: 10 RCTs
Cochrane Database of Systematic Reviews: Issue 3 of 12, March 2017

Issue updated daily throughout month

There are 5 results from 9755 records for your search on (Intraventricular hemorrhage OR Cerebral Hemorrhage OR IVH) AND (prophylactic OR prophylaxis) AND (Indomethacin OR Indomethacin) in Title, Abstract, Keywords and (Infant, Extremely Low Birth Weight OR Extremely very Birth Weight Infants) in Cochrane Reviews'

Select all | Export all | Export selected

- **Prophylactic surgical ligation of patent ductus arteriosus for prevention of mortality and morbidity in extremely low birth weight infants**
  - Rafat Mosaial and Khalid AlFalah
  - Online Publication Date: January 2008
  - [Review](#)

- **Prophylactic intravenous Indomethacin for preventing mortality and morbidity in preterm infants**
  - Peter W. Fowlie, Peter G. Davis and William McGuire
  - Online Publication Date: July 2010
  - [Review](#)

- **Ibuprofen for the prevention of patent ductus arteriosus in preterm and/or low birth weight infants**
  - Ame Ohi lion and Sachin S. Shah
  - Online Publication Date: July 2011
  - [Review](#)

- **Indomethacin for asymptomatic patent ductus arteriosus in preterm infants**
  - Lucy Cooke, Peter A. Steer and Paul G. Woodgate
  - Online Publication Date: January 2003
  - [Review](#)

- **Chest shielding for prevention of a haemodynamically significant patent ductus arteriosus in preterm infants receiving radiation**
  - [Review](#)
When PubMed and Google Scholar do not provide a link to the full-text article, click the Check the UCI Library Catalog: ANTPAC link to determine if the journal is available either in print or online through the UCI Libraries.

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Complete the online form with your name, library card number, Dept., UCI email address, and deliver location.

You will receive an email within a few days with instruction on how to retrieve the article online.
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- **Does NOT** search all of UCI Libraries’ licensed databases. To run a comprehensive search, use databases such as PubMed, Cochrane Library, Web of Science, EBSCOhost, etc.

- Often includes pdf links that are not available through UC-eLinks.

- Provided features such as “Cited by” and “Related articles” (see handouts for search features).
Cochrane Neonatal Group

http://neonatal.cochrane.org/

- one of most active 50 Review Groups within the Cochrane Collaboration.
- an international not-for-profit and independent organization, dedicated to making up-to-date, accurate information about the effects of healthcare readily available worldwide.
- produces and disseminates systematic reviews of healthcare interventions and promotes the search for evidence in the form of clinical trials and other studies of interventions.
- Cochrane Neonatal Group Web Seminars
  http://neonatal.cochrane.org/web-seminars
Our reviews

Full list:

- Acupuncture for hypoxic ischemic encephalopathy in neonates
- Adjuvant corticosteroids for reducing death in neonatal bacterial meningitis
- Adrenaline for prevention of morbidity and mortality in preterm infants with cardiovascular compromise
- Aerosolized diuretics for preterm infants with (or developing) chronic lung disease
- Air versus oxygen for resuscitation of infants at birth
- Albumin infusion for low serum albumin in preterm newborn infants
- Allopurinol for preventing mortality and morbidity in newborn infants with hypoxic-ischaemic encephalopathy
- Alpha-1-proteinase inhibitor (a1PI) for preventing chronic lung disease in preterm infants
- Alternative lipid emulsions versus pure soy oil based lipid emulsions for parenterally fed preterm infants
- Animal derived surfactant extract for treatment of respiratory distress syndrome
- Animal derived surfactant extract versus protein free synthetic surfactant for the prevention and treatment of respiratory distress syndrome
Part II Agenda: Finding the Evidence and Critical Appraisal (2nd hour)

- Each fellow presents his/her submitted EBM search topic and appraises the evidence from the selected RCT.
- Class discussion and faculty feedback.
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Questions?
Thank You!!