The Canadian Association of Paediatric Surgeons Evidence-Based Resource (CAPS EBR)

Bridging the Knowledge-to-Action Gap

https://www.caps.ca/evidence-based-resource/
Disclosure

I have no actual or potential conflict of interest in relation to this topic or presentation.
Evidence in Medicine

• Medicine & all other health care areas are rapidly changing

• Today >20,000 biomedical journals

• To keep up to date in medicine, we need to read 17 articles a day, 365 days a year
555 feet

Washington Monument

A Year of MEDLINE indexed journals
Evidence Based Practice

• Aims to apply the best available evidence gained from the scientific method to medical decision making

• It seeks to assess the quality of evidence of the risks and benefits of treatments (including lack of treatment)
The Evidence

• Exists

• Does not exist
SO MANY STUDIES

...SO LITTLE TIME

https://www.caps.ca/evidence-based-resource/

www.cheo.on.ca
The Hurdles

- Dissemination
- Acceptance
- Application

☐ old routines die hard!

https://www.caps.ca/evidence-based-resource/
The Evidence

- Exists
- Does not exist
  - The vicious circle
Evidence Based Practice

• Surgical practice lags behind its medical counterpart

• Pediatric surgery in particular has trailed general surgery
Summary of the Problem

• There is a disturbing lack of evidence based practice in the pediatric surgery field

• The vicious circle

• Even when evidence exist, there are the three hurdles
## Barriers and Facilitators to EBP

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<th>Barriers</th>
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<td>Time constraints</td>
<td>An institution that generates its own research</td>
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<td>Having a champion for EBP</td>
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<td>General poor quality of evidence</td>
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<td>Lack of required skills</td>
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[https://www.caps.ca/evidence-based-resource/](https://www.caps.ca/evidence-based-resource/)
CAPS EBR

Goal: To facilitate and promote EBP by providing up-to-date critically appraised evidence, and to make recommendations for practice based on evidence.

https://www.caps.ca/evidence-based-resource/
Objective

• To establish a regularly-updated evidence-based resource on the CAPS website
Hypotheses

• We can encourage evidence based practice and improve patient care by:

• 1. Making summaries of evidence easily accessible

• 2. Directing research efforts

https://www.caps.ca/evidence-based-resource/
Methods

1. Define research question
2. Literature search
3. Screening (two levels)
4. Quality assessment
5. Summarization of evidence
6. Regularly update

https://www.caps.ca/evidence-based-resource/
Define Research Question

- Two round Delphi survey
- At least 20 experts per topic

“In your practice with the surgical management of [e.g., undescended testis], what areas do you find to be controversial and in need of further research and/or consensus?”
Data Collection

- Librarian designed search strategy

- Two-levels screening:
  1) Title and abstract
  2) Full text

- Quality assessment of included studies
  - AMSTAR (systematic reviews)
  - Cochrane Risk of Bias (RCT)
  - MINORS (non-RCT)
Dissemination of Evidence

• On the CAPS EBR website (https://www.caps.ca/evidence-based-resource/)
  • Study level summary with quality assessment
  • Overall summary with Oxford Level of Evidence

• Peer-reviewed journal publication

• Media (including social media)

• National organizations
Website

- Currently available: 7 research questions within 5 topics
  - Hypertrophic pyloric stenosis (2 questions)
  - Undescended testes (2 questions)
  - Inguinal hernia and hydroceles
  - Gastroesophageal reflux
  - Cysts of the lung and mediastinum

- In peer review: 2 research questions

- In development: 8 research questions
Hypertrophic Pyloric Stenosis

What Is The Ideal Post-Pyloromyotomy Feeding Regimen?

Evidence Level II

How post-pyloromyotomy feeding contributes to emesis, time to full feeds, and length of hospitalization is not well established, resulting in surgeons often prescribing feeding regimens based on preference.

Results of a systematic literature search did not overwhelmingly favour one feeding regimen over another to reduce emesis; however, a late, gradual, standardized feeding schedule seems to be somewhat protective. Between early and late feeding schedules, late was more commonly favoured, as it appears to reduce the incidence of emesis in both randomized (Turnock 1991) and non-randomized studies (El-Gohary 2010; Georgeson 1993; Lee 2001; van der Blitt 2004; Leaky 1982). However, several additional studies found no difference between early and late feeding regimens in terms of frequency of emesis (Wheeler 1990; Gollin 2000). Results were similarly split concerning the effect of ad libitum feedings versus standardized feeding on emesis. While three comparative studies showed no difference (Adibe 2007; Garza 2002; Adibe 2014), another two studies found ad libitum feedings to increase frequency of emesis (Carpenter 1999; Puapong 2002). Rapid feeding, however, was conclusively shown to increase postoperative emesis, as compared to a gradual, slow feeding protocol (Castellani 2014). Overall, one can conclude that postoperative emesis will occur regardless of feeding approach; however, it may be reduced by utilizing a late, gradual, standardized feeding schedule.

When considering time to full feeds, however, the optimal feeding regimen appears to be the opposite. Ad libitum feeding as compared to a standardized schedule reduces the time required to achieve full feeds in patients (Adibe 2007; Carpenter 1999; Puapong 2002; Garza 2002). It is less clear, however, how an early versus delayed feeding regimen affects this outcome. While one comparative control study indicated that early feeding shortens the interval to full feeds (Gollin 2000) and another successfully paired earlier feeding times with an accelerated feeding advancement (Georgeson 1993), other studies show no difference between regimens (Lee 2001; van der Blitt 2004; Turnock 1991). Therefore, while results are not conclusive, time to full feed may be reduced by an early, ad libitum postoperative feeding schedule.
Feeding Post-Pyloromyotomy: A Meta-analysis
Katrina J. Sullivan, Emily Chan, Jennifer Vincent, Mariam Iqbal, Carolyn Wayne, Ahmed Nasr and for the Canadian Association of Paediatric Surgeons Evidence-Based Resource
*Pediatrics* 2016;137;1; originally published online December 30, 2015;
DOI: 10.1542/peds.2015-2550
Ad Libitum Early Feeding Reduces Stays After Pyloromyotomy

By Will Boggs MD

December 31, 2015

NEW YORK (Reuters Health) - Ad libitum early feeding after pyloromyotomy for hypertrophic pyloric stenosis is associated with shorter hospital stays than structured and delayed feeding, according to a meta-analysis of 14 studies.

"Hypertrophic pyloric stenosis is common, and there is clinical practice variation among surgeons when it comes to postoperative feeding," Dr. Ahmed Nasr, from Children's Hospital of Eastern Ontario, Ottawa, Ontario, Canada, told Reuters Health by email.

"In times of health cost constraint we should be adopting the most cost-effective methods without harming patients. The rapid feeding would lead to a decrease in length of hospital stay without bad outcomes or readmissions."

Early feeding has been championed recently as a way to accelerate hospital discharge, but delayed feeding and gradual advancement of feeding have been advocated because normal gastric peristalsis does not return until 24 hours post-pyloromyotomy.

Dr. Nasr and colleagues, on behalf of the Canadian Association of Paediatric Surgeons Evidence-Based Resource, performed a systematic review and meta-analysis to evaluate the effect of feeding regimens post-
Twitter

CAPS EBR @CAPS_EBR · Jan 6
Our new pub on feeds post-pyloromyotomy tinyurl.com/jqsvjn; summary tinyurl.com/jbezaI8 @CAPSsurgeons @CADTH_ACMTS @CochraneCanada

Cochrane Canada @CochraneCanada · Jan 7
A new #review from our friends @CAPS_EBR "Ad Libitum Early Feeding Reduces Stays After #Pyloromyotomy" ccc.cochrane.org/news/ad-libitu...

CADTH @CADTH_ACMTS · Jan 6
New meta-analysis from @CAPS_EBR on feeds post-pyloromyotomy. Full study: tinyurl.com/jqsvjn Summary: tinyurl.com/jbezaI8
Journal Publications

Original Article

Ideal timing of orchiopexy: a systematic review

Emily Chan · Carolyn Wayne · Ahmed Nasr
FRCSC for the Canadian Association of Pediatric Surgeon Evidence-Based Resource

Review Article

What is the ideal surgical approach for intra-abdominal testes? a systematic review

Carolyn Wayne · Emily Chan · Ahmed Nasr
The Canadian Association of Paediatric Surgeons Evidence-Based Resource

Feeding Post-Pyloromyotomy: A Meta-analysis
Katrina J. Sullivan, Emily Chan, Jennifer Vincent, Mariam Iqbal, Carolyn Wayne, Ahmed Nasr and for the Canadian Association of Paediatric Surgeons Evidence-Based Resource

Pediatrics 2016;137;1; originally published online December 30, 2015; DOI: 10.1542/peds.2015-2550

Review Article

Surgical versus conservative management of congenital pulmonary airway malformation in children: A systematic review and meta-analysis

Jessica Kapralik a, Carolyn Wayne a, Emily Chan a, Ahmed Nasr a,b,*

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https://www.caps.ca/evidence-based-resource/
Choosing Wisely Canada

Paediatric Surgery

Six Things Physicians and Patients Should Question

Released June 2, 2015

5. Don’t delay referral for undescended testes beyond 6 months of age.

The ideal timing for surgical correction of undescended testes is 6 months – 1 year of age. Orchiopexy should not be performed before 6 months of age, as testes may descend spontaneously during the first few months of life. The highest quality evidence recommends orchiopexy between 6 and 12 months of age. Surgery during this time frame may optimize spermatogenic functions.


https://www.caps.ca/evidence-based-resource/
Social Media

• CAPS EBR twitter: @CAPS_EBR

• Twitter of our collaborators/partners:
  • CADTH: @CADTH_ACMTS
  • Cochrane Canada: @CochraneCanada
  • Cochrane Child Health: @Cochrane_child
  • Canadian Association of Paediatric Surgeons: @CAPSsurgeons
Impact

• Facilitate EBP by removing barriers such as:
  • Resources (e.g. time, pay wall, etc.)
  • Lack of skills
  • Quality of the research

• Identify areas in which quantity or quality of evidence is lacking for future primary research

• Serve as an educational resource for residents, fellows, and surgeons
Web Analytics

Evidence-Based Resource

~1,200 views since April 2014

Completed Reviews

Undescended Testis
  What is the ideal management strategy for intra-abdominal testes?
  What is the ideal timing for orchiopey?

Inguinal Hernias and Hydroceles
  Should the contralateral side be explored when repairing a unilateral pediatric inguinal hernia?

Hypertrophic Pyloric Stenosis
  Is laparoscopic or open pyloromyotomy the better method?
  What is the ideal post-pyloromyotomy feeding regimen?

Cysts of the Lungs and Mediastinum
  What is the ideal management of asymptomatic congenital pulmonary airway malformation (CPAM)?

Gastroesophageal Reflux Disease
  Is complete or partial fundoplication superior for surgical management of medically resistant GERD?

1,100+ views since April 2014

1,400+ views since April 2014

https://www.caps.ca/evidence-based-resource/  www.cheo.on.ca
Visit the CAPS EBR!
https://www.caps.ca/evidence-based-resource/

The goal of the Canadian Association of Paediatric Surgeons Evidence-Based Resource (CAPS EBR) is to promote evidence-based practice among pediatric surgeons in order to ensure that children and youth within Canada and around the world receive the best surgical care. The CAPS EBR responds directly to the information needs of pediatric surgeons by providing them with easy access to up-to-date research evidence on key topics of concern, with the addition of clear assessments of the quality of the evidence. By doing so, we facilitate the rapid uptake of good evidence into practice. We also promote the advancement of high-quality research in the field by highlighting topics where additional research is required.

Browse Reviews  More Information
Collaborators/Sponsors

CADTH Evidence Driven.

Cochrane Canada

Department of Surgery

Cochrane Child Health Field

Ontario Ministry of Health and Long-Term Care

Ontario Health Quality Ontario

https://www.caps.ca/evidence-based-resource/ www.cheo.on.ca
Questions?
Available Topics

• Hypertrophic pyloric stenosis
  ✓ Is laparoscopic or open pyloromyotomy the better method?
  ✓ What is the ideal post-pyloromyotomy feeding regimen?

• Undescended testes:
  ✓ What is the ideal management strategy for intra-abdominal testes?
  ✓ What is the ideal timing for orchiopexy?
Available Topics (con’t)

• Inguinal Hernias and Hydroceles:
  ✓ Should the contralateral side be explored when repairing a unilateral pediatric inguinal hernia?

• Gastroesophageal reflux:
  ✓ Complete or partial fundoplication method for surgical management of medically resistant GERD?

• Cysts of the Lung and Mediastinum:
  ✓ What is the ideal management of asymptomatic congenital pulmonary airway malformation (CPAM)
Topics Currently Under Peer Review

• Cysts of the Lung and Mediastinum:
  ✓ What is the optimal age for elective surgical resection of asymptomatic CPAM?

• Inguinal Hernia and Hydroceles:
  ✓ What is the optimal age for surgical treatment of inguinal hernia?