PICU
Current Awareness Newsletter

May 2016
**Outreach**

Your Outreach Librarian can help facilitate evidence-based practise for all PICU staff, as well as assisting with academic study and research. We can help with literature searching, obtaining journal articles and books, and setting up individual current awareness alerts.

**Literature Searching**

We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a 1 to 1 session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence.

**Critical Appraisal Training**

We also offer one-to-one or small group training in literature searching, accessing electronic journals, and critical appraisal/Statistics. These are essential courses that teach how to interpret clinical papers.

For more information, email: katie.barnard@uhbristol.nhs.uk

**Books**

Books can be searched for using SWIMS our online catalogue at www.swims.nhs.uk. Books and journals that are not available on site or electronically may be requested from other locations. Please email requests to: library@uhbristol.nhs.uk
## Contents

1: Tables of Contents from May’s Paediatric journals

2: New NICE Guidance

3: Latest relevant Systematic Reviews from the Cochrane Library

4: Quick Exercise

5: Current Awareness database articles

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### Upcoming Lunchtime Drop-in Sessions

The **Library and Information Service** provides free specialist information skills training for all UHBristol staff and students. To book a place, email: library@uhbristol.nhs.uk

If you’re unable to attend we also provide one-to-one or small group sessions. Contact library@uhbristol.nhs.uk or katie.barnard@uhbristol.nhs.uk to arrange a session.

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Tables of Contents from Paediatric & Critical Care journals

If you require full articles please email: library@uhbristol.nhs.uk

Paediatric Critical Care Medicine
May 2016, Volume 17, Issue 5

Feature Articles

Strain Echocardiography Parameters Correlate With Disease Severity in Children and Infants With Sepsis*
Haileselassie, Bereketeab; Su, Erik; Pozios, Iraklis; Fiskum, Teresa; Thompson, Reid; Abraham, Theodore

Risk Factors for Venous Thromboembolism in Pediatric Trauma Patients and Validation of a Novel Scoring System: The Risk of Clots in Kids With Trauma Score*
Yen, Jennifer; Van Arendonk, Kyle J.; Streiff, Michael B.; McNamara, LeAnn; Stewart, F. Dylan; Conner, Kim G.; Thompson, Richard E.; Haut, Elliott R.; Takemoto, Clifford M.

Application of Sepsis Definitions to Pediatric Patients Admitted With Suspected Infections in Uganda*
Wiens, Matthew O.; Larson, Charles P.; Kumbakumba, Elias; Kissoon, Niranjan; Ansermino, J. Mark; Singer, Joel; Wong, Hubert; Ndamira, Andrew; Kabakyenga, Jerome; Moschovis, Peter; Kiwanuka, Julius

Cardiac Intensive Care

Modes of Death in a Pediatric Cardiac ICU*
Polito, Angelo; Garisto, Cristiana; Pezzella, Chiara; Iacoella, Claudia; Cogo, Paola E.

Risk Factors for Longer Hospital Stay Following the Fontan Operation
Sasaki, Jun; Dykes, John C.; Sosa, Lisa J.; Salvaggio, Jane L.; Tablante, Milagros D.; Ojito, Jorge; Khan, Danyal M.; Hannan, Robert L.; Rossi, Anthony F.; Burke, Redmond P.; Wernovsky, Gil

Fluid Overload Is Associated With Late Poor Outcomes in Neonates Following Cardiac Surgery*
Wilder, Nicole S.; Yu, Sunkyung; Donohue, Janet E.; Goldberg, Caren S.; Blatt, Neal B.

Hemodynamic Effects of Phenylephrine, Vasopressin, and Epinephrine in Children With Pulmonary Hypertension: A Pilot Study*
Siehr, Stephanie L.; Feinstein, Jeffrey A.; Yang, Weiguang; Peng, Lynn F.; Ogawa, Michelle T.; Ramamoorthy, Chandra

Neurocritical Care

Guideline Adherence and Hospital Costs in Pediatric Severe Traumatic Brain Injury*
Graves, Janessa M. et al.

Intracranial Hypertension and Cerebral Hypoperfusion in Children With Severe Traumatic Brain Injury: Thresholds and Burden in Accidental and Abusive Insults
Miller Ferguson, Nikki; Shein, Steven L.; Kochanek, Patrick M.; Luther, Jim; Wisniewski, Stephen R.; Clark, Robert S. B.; Tyler-Kabara, Elizabeth C.; Adelson, P. David; Bell, Michael J.

Quality and Safety
Implementation of a Ventilator-Associated Pneumonia Prevention Bundle in a Single PICU*
De Cristofano, Analia; Peuchot, Veronica; Canepari, Andrea; Franco, Victoria; Perez, Augusto; Eulmesekian, Pablo

Editorials
Sepsis-Induced Myocardial Dysfunction: Another Piece in the Puzzle*
Parker, Margaret M.

It’s Time to ROCKIT: Predicting Venous Thrombosis in Children After Trauma*
Faustino, Edward Vincent S.

Recognizing Pediatric Sepsis: Do the Concepts Help Us to Focus Appropriately?*
Argent, Andrew C.

Modes and Causes of Death in Pediatric Cardiac Intensive Care: Digging Deeper*
Laussen, Peter C.

Fluid Overload After Neonatal Cardiac Surgery Is Bad: Keep the Bottles on the Shelf, Squeeze the Patients...or Both?*
Ricci, Zaccaria

Pediatric Pulmonary Hypertensive Crisis Medications: A Stepping Stone for the Future*
Cunningham, Michael E. A.; Berger, John T.

What Do Severe Traumatic Brain Injury Acute Costs Tell Us About Value? Currently Inconclusive*
Bratton, Susan L.; Bennett, Kimberly Statler

Ventilator-Associated Pneumonia: Easy to Prevent or Hard to Define?*
Steward, Sarah; Muszynski, Jennifer A.

“Potential” Drug-Drug Interactions and the PICU: Should We Worry About ICU Polypharmacy?*
Bhatt-Mehta, Varsha

Acute Kidney Injury in Critically Ill Infants and Children*
Lozano, German; Fuhrman, Bradley

After the Fairytale Ending: Functional Impairment After Pediatric Critical Illness*
Typpo, Katri; Mendelson, Jenny

Letters to the Editor
Perioperative Steroids in Pediatric Cardiopulmonary Bypass: We Still Do Not Have All the Answers
Withington, Davinia E.; Fontela, Patricia S.; Harrington, Karen P.; Lands, Larry C.

The authors reply
Alten, Jeffrey A.; Borasino, Santiago; Kim, Ted

The author replies
Graham, Eric M.

**Magnesium Sulfate for Acute Asthma in Children: A Good Option, but How to Use It?**
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**The authors reply**
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Colombo, Jacopo; Codazzi, Daniela

**The author replies**
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**Online Clinical Investigations**
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Blokpoel, Robert G. T.; Burgerhof, Johannes G. M.; Markhorst, Dick G.; Kneyber, Martin C. J.

**Parental Physical Proximity in End-of-Life Care in the PICU**
Falkenburg, Jeannette L.; Tibboel, Dick; Ganzevoort, Ruard R.; Gischler, Saskia; Hagoort, Jacobus; van Dijk, Monique

**Epidemiology of Polypharmacy and Potential Drug–Drug Interactions Among Pediatric Patients in ICUs of U.S. Children’s Hospitals**
Dai, Dingwei; Feinstein, James A.; Morrison, Wynne; Zuppa, Athena F.; Feudtner, Chris

**Epidemiology and Outcome of Acute Kidney Injury According to Pediatric Risk, Injury, Failure, Loss, End-Stage Renal Disease and Kidney Disease: Improving Global Outcomes Criteria in Critically Ill Children—A Prospective Study**
Volpon, Leila C.; Sugo, Edward K.; Consulin, Julio C.; Tavares, Tabata L. G.; Aragon, Davi C.; Carlotti, Ana P. C. P.

**Evaluation of Disseminated Intravascular Coagulation Scores in Critically Ill Pediatric Patients**
Jhang, Won Kyoung; Ha, Eun Ju; Park, Seong Jong

**Online Review Article**
**Functional Outcomes and Physical Impairments in Pediatric Critical Care Survivors: A Scoping Review**
Ong, Chengsi; Lee, Jan Hau; Leow, Melvin K. S.; Puthucheary, Zudin A.

**Online Brief Report**
**Experience of Circuit Survival in Extracorporeal Continuous Renal Replacement Therapy Using Small-Calibre Venous Cannulae**
Westrope, Claire; Morris, Kevin Paul; Kee, Chor Yek; Farley, Margaret; Fleming, Sarah; Morrison, Gavin

**Current Opinion in Pediatrics**
**June 2016, Volume 28, Issue 3**
- Near-infrared spectroscopy during cardiopulmonary resuscitation and after restoration of spontaneous circulation: a valid technology?
  Wik, Lars

- Chest compression pauses during defibrillation attempts
  Deakin, Charles D.; Koster, Rudolph W.

- Is hypothermia indicated during cardiopulmonary resuscitation and after restoration of spontaneous circulation?
  Stratil, Peter; Holzer, Michael

- High-quality cardiopulmonary resuscitation: current and future directions
  Abella, Benjamin S.

- Monitoring during extracorporeal membrane oxygenation
  Douflé, Ghislaine; Ferguson, Niall D.

- Monitoring patient–ventilator asynchrony
  Dres, Martin; Rittayamai, Nuttapol; Brochard, Laurent

- Flow-directed vs. goal-directed strategy for management of hemodynamics
  Magder, Sheldon

- Current status of tissue monitoring in the management of shock
  Lima, Alexandre

- Decontamination of the pediatric patient
  Zhao, Xian; Dughly, Omar; Simpson, Joelle

- The genetic predisposition to bronchopulmonary dysplasia
  Yu, Kun-Hsing; Li, Jingjing; Snyder, Michael; Shaw, Gary M.; O’Brodovich, Hugh M.

- Pulmonary hypertension in the premature infant: a challenging comorbidity in a vulnerable population
  O’Connor, Michael Glenn; Cornfield, David N.; Austin, Eric D.

- Pediatric sepsis
  Mathias, Brittany; Mira, Juan C.; Larson, Shawn D.

- Child maltreatment: a review of key literature in 2015
  Newton, Alice W.

**Current Opinion in Critical Care**

**June 2016, Volume 22, Issue 3**

- Near-infrared spectroscopy during cardiopulmonary resuscitation and after restoration of spontaneous circulation: a valid technology?
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Flow-directed vs. goal-directed strategy for management of hemodynamics
Magder, Sheldon

Current status of tissue monitoring in the management of shock
Lima, Alexandre

**Pediatric Anesthesia**
**June 2016, Volume 26, Issue 6**

Compatibility of common drugs with acetate-containing balanced electrolyte solutions in pediatric anesthesia
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Dextrose-containing intraoperative fluid in neonates: a randomized controlled trial
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Incidence and risk factors for postoperative vomiting following atrial septal defect repair in children
Joshua Lee, David Faraooni, Sandra Lee, Morgan Brown, Kirsten Odegard, Adrienne Randolph, James A. DiNardo and Koichi Yuki

**Journal of Pediatrics**
**May 2016, Volume 172**

Financial and Social Hardships in Families of Children with Medical Complexity
Joanna Thomson, Samir S. Shah, Jeffrey M. Simmons, Hadley S. Sauer-Ford, Stephanie Brunswick, David Hall, Robert S. Kahn, Andrew F. Beck
Children Hospitalized with Rhinovirus Bronchiolitis Have Asthma-Like Characteristics

Protocol-based, septic-shock care may reduce acute kidney injury
Fran Balamuth Elizabeth R. Alpern

Kazithromycin may prevent severe respiratory-infection-induced wheezing
Kirsten M. Kloepfer

American Journal of Respiratory and Critical Care Medicine
May 2016, Volume 193, Issue 9

Do We Really Know How to Use High-Frequency Oscillatory Ventilation in Critically Ill Children?
Martin C. J. Kneyber, Dick G. Markhorst

Reply: Do We Really Know How to Use High-Frequency Oscillatory Ventilation in Critically Ill Children?
Scot T. Bateman, Santiago Borasino, Lisa A. Asaro, Ira M. Cheifetz, Shelley Diane, David Wypij, Martha A. Q. Curley

Acta Paediatrica
June 2016, Volume 105, Issue 6

Elective ventilation to facilitate organ donation in infants with anencephaly: perinatal professionals’ views and an ethical analysis
Alisa Jivraj, Angie Scales and Joe Brierley

Neonatal organ donors: thinking beyond anencephaly and involving parents and the public
Antoine Payot

The consequences of using organs from anencephalic infants
Niels Lynøe

Discrepancies between plasma procalcitonin and C-reactive protein levels are common in acute illness
Lauri Ivaska, Varpu Elenius, Ilkka Mononen, Olli Ruuskanen and Ville Peltola

Paediatric apnoeas are not related to a specific respiratory virus, and parental reports predict hospitalisation
JO Wishaupt, EAN van den Berg, T van Wijk, T van der Ploeg, FGA Versteegh and NG Hartwig

Critical Care Medicine
May 2016, Volume 44, Issue 5
Conflict Management Strategies in the ICU Differ Between Palliative Care Specialists and Intensivists
Chiarchiaro, Jared; White, Douglas B.; Ernecoff, Natalie C.; Buddadhumaruk, Praewpannarai; Schuster, Rachel A.; Arnold, Robert M.
Clinical Investigations

Validity and Feasibility Evidence of Objective Structured Clinical Examination to Assess Competencies of Pediatric Critical Care Trainees*
Mema, Briseida; Park, Yoon Soo; Kotsakis, Afrothite
Clinical Investigations

The Efficacy of Earplugs as a Sleep Hygiene Strategy for Reducing Delirium in the ICU: A Systematic Review and Meta-Analysis*
Litton, Edward; Carnegie, Vanessa; Elliott, Rosalind; Webb, Steve A. R.
Review Articles

Earplugs, Sleep Improvement, and Delirium: A Noisy Relationship*
Devlin, John W.; Weinhouse, Gerald L.
Editorials

European Journal of Pediatrics
May 2015, Volume 175, Issue 5

Aminoglycoside use in a pediatric hospital: there is room for improvement—a before/after study
Mélanie Houot, Benoit Pilmis, Valérie Thepot-Seegers

Critical Care
2016, Volume 20

Strategies to optimize respiratory muscle function in ICU patients
Willem-Jan M. Schellekens et al.

The interplay between teamwork, clinicians’ emotional exhaustion, and clinician-rated patient safety: a longitudinal study
Annalena Welp, Laurenz L. Meier and Tanja Manser

Pediatrics
May 2016, Volume 137, Issue 5

Human Metapneumovirus Circulation in the United States, 2008 to 2014
Amber K. Haynes, Ashley L. Fowlkes, Eileen Schneider, Jeffry D. Mutuc, Gregory L. Armstrong, and Susan I. Gerber
New Nice Guidance

QS121  Antimicrobial stewardship
NG46  Controlled drugs: safe use and management

Latest relevant Systematic Reviews from the Cochrane Library

Drugs for the acute treatment of migraine in children and adolescents

Quick Exercise

Heterogeneity

Heterogeneity is the extent to which studies brought together in a systematic review demonstrate variation across a range of key variables.

Match the different types of heterogeneity:

1. Statistical heterogeneity (conventionally just known as ‘heterogeneity’)
2. Methodological heterogeneity
3. Clinical heterogeneity

A. Variability in the participants, interventions and outcomes studied
B. Variability in study design and risk of bias
C. Variability in the intervention effects being evaluated in the different studies
Current Awareness Database Articles

If you require full articles please email: library@uhbristol.nhs.uk

Title: Efficacy of noninvasive mechanical ventilation in prevention of intubation and reintubation in the pediatric intensive care unit.

Citation: Journal of critical care, Apr 2016, vol. 32, p. 175-181, 1557-8615 (April 2016)

Author(s): Yaman, Ayhan, Kendirli, Tanıl, Ödek, Çağlar, Ateş, Can, Taşyapar, Nevin, Güneş, Melek, Ince, Erdal

Abstract: To determine the efficiency of noninvasive mechanical ventilation (NIV) both in protection from intubation and in preventing reintubation of postextubation in patients in the pediatric intensive care unit (PICU). A prospective observational study was conducted in a multidisciplinary 10-bed tertiary PICU of a university hospital. All patients were admitted to our unit from June 2012 to May 2014 and deemed to be candidates to receive continuous positive airway pressure or bilevel positive airway pressure. We performed 160 NIV episodes in 137 patients. Their median age was 9 months (range, 1-240 months), and their median weight was 7.5 kg (range, 2.5-65 kg). Fifty-seven percent of patients were male. Noninvasive mechanical ventilation was successful in 70% (112 episodes) of patients. There was an underlying illness in 83.8% (134 episodes) of the patients. Bilevel positive airway pressure support was given to 57.5% (92 episodes) of the patients, whereas the remaining 42.5% (68 episodes) received continuous positive airway pressure support. Among the causes of respiratory failure in our patients, the most frequent were postextubation, pneumonia, bronchiolitis, atelectasia, and cardiogenic pulmonary edema. Sedation was applied in 43.1% of the episodes. Complications were detected in 29 episodes (18.1%). The NIV failure group showed higher Pediatric Risk of Mortality III-24 score, shorter NIV duration, more frequent underlying disease, lower number fed, longer length of PICU stay, and hospital stay, and mortality was higher. Noninvasive mechanical ventilation effectively and reliably reduced endotracheal intubation in the treatment of respiratory failure due to different clinical situations. Our results suggest that NIV can play an important role in PICUs in helping to avoid intubation and prevent reintubation. Although there were serious underlying diseases in most of our patients, such as immunosuppression, 70% avoided intubation with use of NIV. Copyright © 2015 Elsevier Inc. All rights reserved.

Title: Development and validation of the "Pediatric Risk of Nosocomial Sepsis (PRiNS)" score for health care-associated infections in a medical pediatric intensive care unit of a developing economy-a prospective observational cohort study.

Citation: Journal of critical care, Apr 2016, vol. 32, p. 152-158, 1557-8615 (April 2016)

Author(s): Saptharishi, L G, Jayashree, Muralidharan, Singhi, Sunit

Abstract: Given the high burden of health care-associated infections (HAIs) in resource-limited settings, there is a tendency toward overdiagnosis/treatment. This study was designed to create an easy-to-use, dynamic, bedside risk stratification model for classifying children based on their risk of developing HAIs during their pediatric intensive care unit (PICU) stay, to aid judicious resource utilization. A prospective, observational cohort study was conducted in the 12-bed PICU of a large Indian tertiary care hospital between January and October 2011. A total of 412 consecutive admissions, aged 1 month to 12 years with PICU stay greater than 48 hours were enrolled.
Independent predictors for HAIs identified using multivariate regression analysis were combined to create a novel scoring system. Performance and calibration of score were assessed using receiver operating characteristic curves and Hosmer-Lemeshow statistic, respectively. Internal validation was done. Age (<5 years), Pediatric Risk of Mortality III (24 hours) score, presence of indwelling catheters, need for intubation, albumin infusion, immunomodulator, and prior antibiotic use (≥4) were independent predictors of HAIs. This model, with area under the ROC curve of 0.87, at a cutoff of 15, had a negative predictive value of 89.9% with overall accuracy of 79.3%. It reduced classification errors from 29.8% to 20.7%. All 7 predictors retained their statistical significance after bootstrapping, confirming the internal validity of the score. The "Pediatric Risk of Nosocomial Sepsis" score can reliably classify children into high- and low-risk groups, based on their risk of developing HAIs in the PICU of a resource-limited setting. In view of its high sensitivity and specificity, diagnostic and therapeutic interventions may be directed away from the low-risk group, ensuring effective utilization of limited resources. Copyright © 2015 Elsevier Inc. All rights reserved.

Title: Clinical equipoise on prophylaxis against catheter-associated thrombosis in critically ill children.

Citation: Journal of critical care, Apr 2016, vol. 32, p. 26-30, 1557-8615 (April 2016)

Author(s): Mannarino, Candace N, Faustino, Edward Vincent S

Abstract: In preparation for a randomized controlled trial of prophylaxis against catheter-associated deep venous thrombosis in critically ill children, we aimed to determine clinical equipoise, defined as willingness to randomize children, among pediatric critical care physicians. We conducted a cross-sectional, self-administered electronic survey of pediatric critical care physicians in the United States. The survey focused on the effect of child’s age, presence of a central venous catheter, and risk (ie, presence of coagulopathy or recent surgery) and presence of bleeding on their willingness to randomize children to an anticoagulant or placebo. Responses from 239 (33.0%) of 725 physicians were analyzed. Respondents were willing to randomize children 1 month or older in the presence of a catheter but only those older than 13 years in the absence of a catheter. For children with coagulopathy, they would randomize those with international normalized ratio less than or equal to 2.0, partial thromboplastin time less than or equal to 50 seconds, and platelet count greater than or equal to 50000/mm(3). Respondents were willing to randomize children 2 days after most types of surgery and after 1 to 5 days of a bleeding event. Clinical equipoise on prophylaxis against catheter-associated thrombosis exists among pediatric critical care physicians, which ethically justifies conducting a randomized controlled trial. Copyright © 2015 Elsevier Inc. All rights reserved.

Title: Optimizing Virus Identification in Critically Ill Children Suspected of Having an Acute Severe Viral Infection.


Abstract: Multiplex rapid viral tests and nasopharyngeal flocked swabs are increasingly used for viral testing in PICUs. This study aimed at evaluating how the sampling site and the type of diagnostic test influence test results in children with suspected severe viral infection. Prospective cohort study. PICUs at 21 tertiary pediatric referral centers in the United States. During the 2010-2011 and 2011-2012 influenza seasons, we enrolled children (6 mo to 17 yr old) who were suspected to have severe viral infection. We collected samples by using a standardized protocol for nasopharyngeal aspirate and nasopharyngeal flocked swabs in nonintubated patients and for endotracheal tube aspirate and nasopharyngeal flocked swabs in intubated patients. Viral testing included a single reverse transcription-polymerase chain reaction influenza test and the GenMark Respiratory Viral Panel (20 viruses). We enrolled 90 endotracheally intubated and 133 nonintubated children. We identified influenza in 45 patients with reverse transcription-polymerase chain reaction testing; the multiplex panel was falsely negative for influenza in two patients (4.4%). Six patients (13.3%) had not been diagnosed with influenza in the PICU. Non-influenza viruses were identified in 172 of 223 children (77.1%). In nonintubated children, the same virus was identified by nasopharyngeal flocked swabs and nasopharyngeal aspirate in 133 of 183 paired samples (72.7%), with +nasopharyngeal aspirate/-nasopharyngeal flocked swabs in 32 of 183 paired samples (17.4%). In intubated children, the same virus was identified by nasopharyngeal flocked swabs and endotracheal tube aspirate in 67 of 94 paired samples (71.3%), with +nasopharyngeal flocked swabs/-endotracheal tube aspirate in 22 of 94 paired samples (23.4%). Most discrepancies were either adenovirus or rhinovirus in both groups. Standardized specimen collection and sensitive diagnostic testing with a reverse transcription-polymerase chain reaction increased the identification of influenza in critically ill children. For most pathogenic viruses identified, results from nasopharyngeal flocked swabs agreed with those from nasopharyngeal or endotracheal aspirates.

Title: Advanced Technology in Pediatric Intensive Care Units: Have They Improved Outcomes?

Citation: Pediatric clinics of North America, Apr 2016, vol. 63, no. 2, p. 293-301, 1557-8240 (April 2016)

Author(s): Frederick, Sean A

Abstract: In medicine, providers strive to produce quality outcomes and work to continually improve those outcomes. Whether it is reducing cost, decreasing length of stay, mitigating nosocomial infections, or improving survival, there are a myriad of complex factors that contribute to each outcome. One of the greatest challenges to outcome improvement is in pediatric intensive care units, which tend to host the sickest, most complex, smallest, and frailest of pediatric patients. This article highlights some studies and advances in informatics that have influenced intensive care unit outcomes. Copyright © 2016 Elsevier Inc. All rights reserved.

Title: Seizures in a Pediatric Intensive Care Unit: A Prospective Study.

Citation: Journal of tropical pediatrics, Apr 2016, vol. 62, no. 2, p. 94-100, 1465-3664 (April 2016)

Author(s): Sahin, Sanliay, Yazici, Mutlu Uysal, Ayar, Ganime, Karalok, Zeynep Selen, Arhan, Ebru Petek

Abstract: The aim of the research is to determine the etiology and clinical features of seizures in critically ill children admitted to a pediatric intensive care unit (PICU). A total of 203 children were admitted from June 2013 to November 2013; 45 patients were eligible. Age ranged from 2 months
to 19 years. Seizures were organized as epileptic or acute symptomatic. Pediatric risk of mortality score III, Glasgow coma scale, risk factors, coexistent diagnosis, medications administered before admission, type and duration of seizures, drugs used, requirement and duration of mechanical ventilation, length of stay and neuroimaging findings were collected as demographic data prospectively. The male-female ratio was 0.8. Mean age was 5.4. The most common causes of seizures were acute symptomatic. Most frequent coexistent diagnosis was infectious diseases, and 53.3% had recurrent seizures. Medications were administered to 51.1% of the patients before admission. Seizures were focal in 21 (46.7%), generalized in 11 (24.4%) and 13 (28.9%) had status epilepticus. Intravenous midazolam was first-line therapy in 48.9%. Acute symptomatic seizures were usually new-onset, and duration was shorter. Epileptic seizures tended to be recurrent and were likely to progress to status epilepticus. However, type of seizures did not change severity of the disease. Also, laboratory test results, medications administered before admission, requirement and duration of ventilation, mortality and length of stay were not significant between epileptic/acute symptomatic patients. Seizures in critically ill children, which may evolve into status epilepticus, is an important condition that requires attention regardless of cause. Intensified educational programs for PICU physicians and international guidelines are necessary for a more efficient approach to children with seizures. © The Author [2016]. Published by Oxford University Press. All rights reserved. For Permissions, please email: journals.permissions@oup.com.

Title: How much protein and energy are needed to equilibrate nitrogen and energy balances in ventilated critically ill children?

Citation: Clinical nutrition (Edinburgh, Scotland), Apr 2016, vol. 35, no. 2, p. 460-467, 1532-1983 (April 2016)

Author(s): Jotterand Chaparro, Corinne, Laure Depeyre, Jocelyne, Longchamp, David, Perez, Marie-Hélène, Taffé, Patrick, Cotting, Jacques

Abstract: Protein and energy requirements in critically ill children are currently based on insufficient data. Moreover, longitudinal measurements of both total urinary nitrogen (TUN) and resting energy expenditure (REE) are lacking. The aim of this study was to investigate how much protein and energy are needed to equilibrate nitrogen and energy balances in ventilated critically ill children on the basis of daily measurements of TUN, REE and protein and energy intakes. Comparisons were made with the guidelines of the American Society for Parenteral and Enteral Nutrition and the Dietary Reference Intakes. Children with an expected duration of mechanical ventilation ≥72 h were prospectively recruited. TUN was measured by chemiluminescence, and REE was measured by indirect calorimetry. Generalised linear models for longitudinal data were used to study the relation between protein intake and nitrogen balance and to calculate the minimum intake of protein needed to achieve nitrogen equilibrium. A similar approach was used for energy. Results were compared to the recommended values. Based on 402 measurements performed in 74 children (median age: 21 months), the mean TUN was high at 0.20 (95% CI: 0.20, 0.22) g/kg/d and the REE was 55 (95% CI: 54, 57) kcal/kg/d. Nitrogen and energy balances were achieved with 1.5 (95% CI: 1.4, 1.6) g/kg/d of protein and 58 (95% CI: 53, 63) kcal/kg/d for the entire group, but there were differences among children of different ages. Children required more protein and less energy than the Dietary Reference Intakes. In critically ill children, TUN was elevated and REE was reduced during the entire period of mechanical ventilation. Minimum intakes of 1.5 g/kg/d of protein and 58 kcal/kg/d can equilibrate nitrogen and energy balances in children up to 4 years old. Older children require more protein. Copyright © 2015 Elsevier Ltd and European Society for Clinical Nutrition and Metabolism. All rights reserved.
**Title:** A Critical Care and Transplantation-Based Approach to Acute Respiratory Failure after Hematopoietic Stem Cell Transplantation in Children.

**Citation:** Biology of blood and marrow transplantation : journal of the American Society for Blood and Marrow Transplantation, Apr 2016, vol. 22, no. 4, p. 617-626, 1523-6536 (April 2016)

**Author(s):** Elbahlawan, Lama, Srinivasan, Ashok, Morrison, R Ray

**Abstract:** Acute respiratory failure contributes significantly to nonrelapse mortality after allogeneic hematopoietic stem cell transplantation. Although there is a trend of improved survival over time, mortality remains unacceptably high. An understanding of the pathophysiology of early respiratory failure, opportunities for targeted therapy, assessment of the patient at risk, optimal use of noninvasive positive pressure ventilation, strategies to improve alveolar recruitment, appropriate fluid management, care of the patient with chronic lung disease, and importantly, a team approach between critical care and transplantation services may improve outcomes. Copyright © 2016 American Society for Blood and Marrow Transplantation. Published by Elsevier Inc. All rights reserved.

**Title:** Methylnaltrexone for the Treatment of Constipation in Critically Ill Children.

**Citation:** Journal of clinical gastroenterology, Apr 2016, vol. 50, no. 4, p. 351-352, 1539-2031 (April 2016)

**Author(s):** López, Jorge, Fernández, Sarah N, Santiago, María J, Urbano, Javier, González, Rafael, Fernández-Llamazares, Cecilia, López-Herce, Jesús

**Title:** 'Something normal in a very, very abnormal environment’ - Nursing work to honour the life of dying infants and children in neonatal and paediatric intensive care in Australia.

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**Abstract:** The majority of deaths of children and infants occur in paediatric and neonatal intensive care settings. For nurses, managing an infant/child's deterioration and death can be very challenging. Nurses play a vital role in how the death occurs, how families are supported leading up to and after the infant/child's death. This paper describes the nurses' endeavours to create normality amidst the sadness and grief of the death of a child in paediatric and neonatal ICU. Focus groups and individual interviews with registered nurses from NICU and PICU settings gathered data on how neonatal and paediatric intensive care nurses care for families when a child dies and how they perceived their ability and preparedness to provide family care. Four themes emerged from thematic analysis: (1) respecting the child as a person; (2) creating opportunities for family involvement/connection; (3) collecting mementos; and (4) planning for death. Many of the activities described in this study empowered parents to participate in the care of their child as death approached. Further work is required to ensure these principles are translated into practice. Copyright © 2015 Elsevier Ltd. All rights reserved.
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