

Research Media Watch:

Compiled by Kamale VN*

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1. Delivering Value Through Evidence-Based Practice

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Source: In Clinical Pediatric Emergency Medicine Publisher:Elsevier Inc.

Abstract:

Unwanted variation in care is a challenge to high-quality care delivery in any healthcare system. Across the Emergency Medical Services for Children (EMSC) continuum there is wide variation in care delivery for which best practices have demonstrated opportunities to minimize that variation through clinical standards (evidence-based pathways, protocols, and guidelines for care). A model of development of clinical standards is delineated and tools used in that process are described. Implementation strategies for improving utilization are also described with clinical decision support tools being a promising strategy for accelerating uptake of guidelines. Critical to implementing guidelines through improvement science strategies is the ability to make iterative improvements directed by data and analytics. The progression of sophistication in a system's informatics and analytics capabilities is driven by a maturity of data reporting to analytics that drives decision support for implementing clinical standards. Integration of financial data into the clinical standards processes and analytics platforms is necessary to determine value of the work. Within the EMSC continuum, a number of initiatives will drive national clinical standards activities and are fueled by current pockets of successful development and implementation activities within organizations and systems.

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Comment:

Evidence based medicine ,protocol based managment are key areas in patient care. Developing country like india has recently started to work on these areas. this culture is slowly picking up in corporate hospitals which undergo accreditation for various purposes. Exceptional governments establishment in health care sectors is accredited or some health prpgrammes are already going through quqlity control. However, the possibility of improvements in health sector across India seems to be distant dream, given the recent examples like encephalitis tragedy.

2. Efficacy and safety of early supplementation with 800 IU of Vitamin D in very preterm infants followed by underlying levels of Vitamin D at birth.

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Source: Italian Journal of Pediatrics. 5/4/2017, Vol. 43, p1-8. 8p.

Document Type: Article

Abstract:

Background: To determine the efficacy and safety of early supplementation with 800 IU of Vitamin D in very low birth weight (VLBW) infants.

Methods:

Sixty-six infants with a birth weight less than 1500 g admitted to the Neonatal Intensive Care Unit. Of these, 52 infants were eligible and received 800 IU/day Vitamin D from 2 weeks of age. We examined 25-hydroxyvitamin-D (25[OH]D) levels from cord blood at birth and serum at 32 and 36 weeks of postmenstrual age.

Results:

The study infants were divided by cord-blood levels of 25(OH)D at birth into 25(OH)D concentrations < 10 ng/mL (n = 20) or ≥ 10 ng/mL (n = 29). Vitamin D intake of 800 IU/day safely achieved an 88% probability of Vitamin D sufficiency at 36 weeks postmenstrual age in VLBW infants with cord-blood levels of 25(OH)D ≥ 10 ng/mL, and 65% probability of Vitamin D sufficiency was observed in infants with 25 OHD concentrations < 10 ng/mL at birth.

Conclusion:

Considering the efficacy and safety of Vitamin D supplementation in this study, Vitamin D intake of 800 IU/day may enhance Vitamin D status during early hospitalization in VLBW infants with 25 OHD concentrations < 10 ng/mL at birth. The clinical significance of optimal Vitamin D intake in VLBW infants needs to be studied in larger controlled studies.

Comment:

Vitamin D use or abuse? Every single researcher is trying to extract something or the other from Vitamin D. Although, it is well known that Vitamin D has got place in every pathophysiology of disease, the only area of concern is toxicity related to Vitamin D. There are emerging reports of toxicity with Vitamin D. The recommendation in this study seems to be little higher.

3. Neurodevelopmental Outcome of Asymptomatic Hypoglycemia Compared With Symptomatic Hypoglycemia and Euglycemia in High-Risk Neonates

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Source: In Pediatric Neurology September 2017 74:74-79

Publisher: Elsevier Inc.

Abstract:

Aims We assessed the neurodevelopmental outcome at one year of age of children with asymptomatic neonatal hypoglycemia and compared their outcome with that of symptomatic hypoglycemic and euglycemic neonates.

Method :

Seventy two hypoglycemic (plasma glucose less than 50 mg/dL) neonates, both symptomatic (n = 27) and asymptomatic (n = 45), and 70 weight- and gestation-matched euglycemic neonates of gestational age greater than 32 weeks were enrolled during the first week of life then assessed for neurodevelopmental outcome at corrected age six and 12 months (n = 67 and 62 in hypoglycemia group and 63 and 54 in euglycemia group, with the rest lost to follow-up, and death = 1).

Results :

At one year, 8% (five of 62, four in symptomatic and one in asymptomatic group) of hypoglycemic neonates developed cerebral palsy. Mean motor and mental development quotients were significantly lower at corrected ages six and 12 months in any hypoglycemia ($P < 0.001$) and if blood glucose was less than 40 mg/dL ($P < 0.001$) when compared with euglycemia. Symptomatic infants had lower motor development quotient ($P = 0.004$ and 0.003) and mental development quotient ($P = 0.001$ and 0.001) at corrected ages six and 12 months than asymptomatic infants, and asymptomatic infants had lower motor development quotient ($P \leq 0.001$ and 0.004) and mental development quotient ($P = 0.001$ and 0.004) than the euglycemic group at corrected ages six and 12 months, respectively. Blood glucose of less than 40 mg/dL had high sensitivity (83% for motor development quotient and 81% for mental development quotient) for development quotient scores of less than 85.

Conclusion :

Hypoglycemia, both symptomatic and asymptomatic, leads to adverse neurodevelopmental outcome when compared with euglycemia, although it was worse in the symptomatic group and at blood glucose less than 40 mg/dL.

Comments :

Hypoglycemia in neonate is real neuroemergency, as perceived since beginning. Although recent study from India seems to be giving glimmer of hope in this touchy issue. All pediatrician have fear of hypoglycemia, so they start early formula feeds to newborns and forget about breast feeding.

4. Seizures in Preterm Neonates: A Multicenter Observational Cohort Study

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Source: In Pediatric Neurology July 2017 72:19-24 Publisher: Elsevier Inc.

Abstract:

Background The purpose of this study was to characterize seizures among preterm neonates enrolled in the Neonatal Seizure Registry, a prospective cohort of consecutive neonates with seizures at seven pediatric centers that follow the American Clinical Neurophysiology Society's neonatal electroencephalography monitoring guideline.

Study :

Design Of 611 enrolled neonates with seizures, 92 (15%) were born preterm. Seizure characteristics were evaluated by gestational age at birth for extremely preterm (<28 weeks, N = 18), very preterm (28 to <32 weeks, N = 18), and moderate to late preterm (32 to <37 weeks, N = 56) and compared with term neonates.

Results :

Hypoxic-ischemic encephalopathy (33%) and intracranial hemorrhage (27%) accounted for the etiology in more than half of preterm neonates. Hypothermia therapy was utilized in 15 moderate to late preterm subjects with encephalopathy. The presence of subclinical seizures, monotherapy treatment failure, and distribution of seizure burden (including status epilepticus) was similar in preterm and term neonates. However, exclusively subclinical seizures occurred more often in preterm than term neonates (24% vs 14%). Phenobarbital was the most common initial medication for all gestational age groups, and failure to respond to an initial loading dose was 63% in both preterm and term neonates. Mortality was similar among the three preterm gestational age groups; however, preterm mortality was more than twice that of term infants (35% vs 15%).

Conclusions :

Subclinical seizures were more common and mortality was higher for preterm than term neonates. These data underscore the importance of electroencephalographic monitoring and the potential for improved management in preterm neonates.

Comment: in present issue of our journal ,an article on similar backgroundis available.but due to lack of equipments and training, a basic pediatrician is not able to identify significance of subtle seizures.

5. Physician perspectives on vaccination and diagnostic testing in children with gastroenteritis: A primary care physician survey.

Authors : Sperou, Arissa J. Dickinson, James A. LeeMD MPH, Bonita Louie, Marie Xiao-Li Pang Linda Chui Vanderkooi, Otto G. Freedman, Stephen B.

Source : Paediatrics & Child Health (1205-7088); Sep2017, Vol. 22 Issue 6, p317-321, 5p, 4 Charts
Publication Year: 2017

Abstract:

Objectives: Gastroenteritis remains a common paediatric illness. Little is known about physician knowledge of enteric pathogen diagnostic tests. At the time of study conduct, Alberta lacked a publicly funded rotavirus vaccination program and knowledge of primary care physician perspectives was lacking. We sought to ascertain diagnostic testing methods and to understand knowledge and perceptions regarding enteric pathogen vaccination. **Methods:** A 30-item electronic survey was distributed across Alberta's five health care zones. The survey was developed by virology, microbiology, paediatrics, family medicine and public health experts. Participants were members of Alberta's Primary Care Networks, the TARRANT network and The Society of General Pediatricians of Greater Edmonton. Study outcomes included: (1) physician knowledge of available diagnostic tests, (2) perspectives regarding stool sample collection and (3) support for an enteric vaccine program. **Results:** Stool culture was reported as the test to identify parasites (47%), viruses (74%) and *Clostridium difficile* (67%). Although electron microscopy and enzyme immunoassay were used to identify viruses in Alberta during the study period, only 20% and 48% of respondents respectively identified them as tests employed for such purposes. Stool testing was viewed as being inconvenient (62%; 55/89), whereas rectal swabs were thought to have the potential to significantly improve specimen collection rates (82%; 72/88). Seventy-three per cent (66/90) of the respondent physicians support the adoption of future enteric pathogen vaccines. **Conclusions:** Simplification of diagnostic testing and stool sample collection could contribute to improved pathogen identification rates. Implementation of an enteric vaccine into the routine paediatric vaccination schedule is supported by the majority of respondents.

Comments:

This study is from Canada, a developed country and was questionnaire based online survey. Unfortunately, they got complete response from almost 10% doctors. However, it signifies that in countries with so-called good system of medical education , many doctors are unaware of recent advances and basic knowledge regarding childhood vaccinations especially rotavirus.