

CONCLUSIONS: More than 60% of all Canadian pediatric residents pursue subspecialty careers. There was a significant increase in the frequency of subspecialty training among later-year graduates. Few graduates are practicing in rural/remote or underserved areas. Canadian pediatric residency programs may not be producing the right mix of graduates to meet societal needs.

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Features in Septic Children With or Without Severe Acute Malnutrition and the Risk Factors of Mortality

BACKGROUND AND OBJECTIVE: Immunity is heavily impaired in children experiencing severe acute malnutrition (SAM), often resulting in sepsis and death. Knowledge of biochemical derangements during the early stage of sepsis among these children with SAM would help in their treatment and reduce fatality. The goal of this study was to describe and compare the features of sepsis in children with SAM and those without SAM, and the risks and associated factors of death in septic children.

METHODS: Children aged 6 to 59 months with SAM (weight-for-height z score ≤ 3) or bipedal edema and non-SAM admitted with diarrhea plus sepsis at the icddr,b hospital from April 2010 to December 2011 were studied prospectively.

RESULTS: A total of 126 children (48 with SAM and 78 without SAM) were studied; all had diarrhea and sepsis. Their mean \pm SD age was 19.1 ± 14.2 months; 52% were female; capillary refill time, neutrophil and band %, serum urea nitrogen, pH, hemoglobin, platelet, serum total CO₂, phosphate, calcium, C-reactive protein, creatinine, and creatine kinase were similar between SAM and non-SAM children ($P > .05$). However, serum sodium and albumin levels were lower and leukocyte count, hypoglycemia, septic shock, and mortality rates were higher in SAM than in non-SAM children ($P < .05$). Logistic regression showed that septic children with SAM were 13 times more likely to have fever or hypothermia than septic children without SAM. Among these 126 children, 25 (19.8%) died. Weight-for-height z score (-3.0 ± 2.1 vs -2.7 ± 1.5), % band cell (5.2 ± 6.4 vs 2.6 ± 5.5), sodium (154 ± 29 vs 142 ± 21), serum urea nitrogen (25.7 ± 21.5 vs 17.8 ± 16.1), and septic shock (92% vs 9%) findings were significantly higher, and hemoglobin (9.2 ± 1.6 vs 10.3 ± 2.0) and

albumin (2.9 ± 1.1 vs 3.4 ± 0.8) levels were significantly lower, among those who died than in the children who survived, respectively. Children who died were 4 times more likely to be severely wasted and 3 times more likely to have had moderate anemia.

CONCLUSIONS: The case fatality rate is significantly high in sepsis, particularly in septic shock and children with SAM. These features may assist in the better management of septic children with or without SAM and thus reduce fatality.

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Effect of Guided Imagery Relaxation Session and Story-Telling on the Intensity of Nausea and Vomiting Among Children Undergoing Chemotherapy

The aims of this study were to develop, implement, and evaluate the effect of a guided imagery relaxation session and telling stories on reducing the intensity of nausea and vomiting, as well as make comparisons between the 2 methods. The study used a quasi-experimental design and was conducted at the Pediatric Oncology Department in Tanta University Hospital, the Pediatric Oncology Department in the Tanta Oncology Center, and the Pediatric Oncology Department in the Specialized Pediatric Hospital in Benha University. The study included a convenience sample of 90 children aged between 4 and 18 years receiving chemotherapy. They were classified randomly into 3 groups; the guided imagery relaxation sessions were the first group, story-telling was the second group, and the third group was the control group. The first and second groups were assessed at the first and second months of intervention.

Tools of this study included the Morrow Assessment of Nausea and Emesis Questionnaire, the Rhodes Index of Nausea and Vomiting Likert scale, the Katz Index of Independence in Activities of Daily Living checklist, and a self-rating scale.

The results showed that approximately all children in the relaxation and story-telling groups did not have nausea and vomiting compared with the control group after the first and second months of relaxation and story-telling.

The study concluded that children exposed to guided imagery relaxation sessions and story-telling experienced a lower intensity of nausea and vomiting compared with children in the control group. This study therefore recommends that guided imagery relaxation sessions and story-telling should be integrated into routine nursing care along with pharmacologic

interventions for the management of nausea and vomiting for these children. Future research is needed to develop and update other forms of relaxation techniques.

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Relationship Between Microalbuminuria and Kidney Scars in Children With Vesicoureteral Reflux

BACKGROUND: Vesicoureteral reflux (VUR) is one of the most common anomalies of the urinary system that predisposes to recurrent pyelonephritis, hypertension, renal parenchymal scars, and chronic renal failure if not managed properly. Recent studies show that microalbuminuria is a marker of glomerular damage at early stages. In adults, microalbuminuria is considered a risk factor for the occurrence of nephropathy. However, the data are limited in children.

OBJECTIVES: The goal of this study was to evaluate the relationship between microalbuminuria and kidney scarring, creatinine clearance, and severity of reflux in children with VUR.

METHODS: In this cross-sectional study, 87 children aged <14 years with VUR referred to Children's Hospital of Tabriz, Iran, were studied from 2012 to 2013. VUR was detected by using radiologic voiding cystourethrography. Urine microalbumin measurements and renal ^{99m}Tc-dimercaptosuccinic acid (DMSA) scans (for detecting scars) were performed in all patients 3 months after treatment of urinary tract infections. Creatinine clearance was calculated according to the Schwartz formula by using serum creatinine and patient height. Microalbuminuria was defined as 30 to 300 mg of microalbumin in 24-hour urine or a microalbumin to creatinine ratio of 0.03 to 0.3 in random urine. The relationship between variables was assessed by using SPSS software.

RESULTS: The mean age of the patients was 4.49 ± 2.64 years, and 82.8% of patients were female. Severity of reflux was mild (grades 1–2) in 23%, moderate (grade 3) in 33.3%, and severe (grades 4–5) in 43.7% of patients. Results of the DMSA scan were abnormal in 58 patients (66.6%). Microalbuminuria was detected in 19 patients (21.8%), and the amount of microalbumin was in the normal range in 68 patients (78.2%). With increasing grading of reflux, the amount of microalbuminuria increased and the amount of creatinine clearance decreased, but the changes were not statistically significant ($P > .05$). Urinary microalbumin in patients with scarred kidneys (33.32 ± 28.69 mg) was significantly higher than in patients without scarring (10.82 ± 8.83 mg) ($P = .006$). The frequency of scarred kidneys in

mild, moderate, and severe grades of reflux was 50%, 62.1%, and 78.9%, respectively ($P = .07$). Frequency of microalbuminuria was 31% in patients with scarring, and only 3.4% of patients without scarring had microalbuminuria ($P = .003$). There was no significant difference in frequency of microalbuminuria and kidney scarring between boys and girls ($P > .05$).

CONCLUSIONS: In this study, we found no significant correlation between microalbuminuria, creatinine clearance, and abnormality on DMSA scans with grading of reflux. However, there was a significant correlation between microalbuminuria and presence of scars in the kidney. Microalbuminuria may be considered a marker for renal parenchymal damage.

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High Prevalence of Morning Hydration Deficit in Egyptian Schoolchildren

BACKGROUND AND OBJECTIVES: Water is a vital nutrient, and adequate hydration is important for the body to function properly. Children who drink too little water to meet their daily requirements are likely to become dehydrated, and even mild dehydration can have negative effects on the body. This issue is even more important in Middle Eastern countries, where high ambient temperatures increase the risk of dehydration. This study is the first cross-sectional trial aimed at measuring morning hydration status in a large cohort of 519 Egyptian schoolchildren aged 9 to 11 years.

METHODS: Children were recruited from schools in and around the city of Damanhour, Egypt. With the help of an experienced nutritionist, the children completed a questionnaire on breakfast foods and fluids intake and collected a same-day urine sample after their breakfast. Breakfast food and fluid nutritional composition were analyzed, and urine osmolality was measured by using osmometry.

RESULTS: Surprisingly, >60% of the children skipped breakfast, leaving home without eating or drinking anything. The mean urine osmolality of these recruited Egyptian children was 814 mOsm/kg. Fifty-seven percent of the children had a urine osmolality >800 mOsm/kg, reflecting a hydration deficit, and 24.7% of children recorded high urinary osmolality (>1000 mOsmol/kg). Furthermore, results showed that a total water intake of <400 mL was associated with a significantly higher risk of dehydration.

CONCLUSIONS: This study found that a majority of Egyptian schoolchildren arrive at school with a hydration deficit. These results highlight the fact that there is a need to educate schoolchildren regarding the importance of having

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