

The magnitude of macro and micronutrient deficiencies in paediatric oncology patients aged 2–18 years

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Objective: To assess the magnitude of macro and micronutrient deficiencies in paediatric oncology patients aged 2–18 years.

Design and methods: A total of 25 (16 females, 9 males) paediatric oncology patients from the outpatient clinic at Eric Williams Medical Sciences Complex participated in the study. Food frequency questionnaire and three-day dietary records were used to assess nutritional habits of the children. Body mass index (BMI) was computed from hospital records. Data were analysed using Excel and SPSS 20.0.

Results: The mean weight of oncology paediatric patients was: 6.7 kg for 1–3 year olds, 12 kg for 4–8 years, 23.3 kg for 9–13 years and 39.8 kg for 14–18 years. These values were below the normal weight of healthy children of comparable ages. The intakes of all macro and micronutrients were lower than the recommended values, except for fat and vitamin C. Generally, the diet consumed by most patients was poor and none used dietary supplements.

Conclusion: Low intakes of macro and micronutrients were found in the paediatric oncology patients; they may benefit from nutrition intervention. It is recommended that promoting knowledge of healthy-eating guidelines in these patients may include educational sessions for parents, which may be conducted at the clinic on specific days.

P – 23

Infant feeding patterns, body mass index and missing data: A mixed methodological assessment in the public health clinics in Nassau, Bahamas

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Objective: To assess the risk of childhood obesity by infant feeding and to explore the issues surrounding missing medical data in public child health clinics.

Design and Methods: This was a mixed-methods study on childhood body mass index (BMI), infant feeding and

missing medical data in public clinics in New Providence, The Bahamas. Infant feeding at two, four, six and 12 months, and growth parameters at four years were reviewed and analysed in 396 charts. Key-informant semi-structured interviews, a focus group discussion, and direct observation explored issues surrounding the uncovered missing data.

Results: Four-year old children had a mean BMI of 15.90 (+ 2.85) kg/m² with overweight and obesity accounting for 22.0%. At four months, 60.3% were breastfed. The normal weight children fed only formula at four months had a BMI 1.308 (+ 0.531) kg/m² lower than those breastfed only ($p = 0.014$). No definite increased risk of childhood obesity was observed for those breastfed *versus* formula fed at four months [OR 1.539 (95% CI: 0.650, 3.603)]. Missing data on infant feeding increased from 15.2% at two months to 31.0% at one year.

Nurses felt that limited clinic space created concern for privacy and confidentiality and affected the quality of information collected in interviews. The forms used were described as tedious, ambiguous, repetitive and time consuming to complete and contributed to the quantity of missing data.

Conclusions: Initiatives to improve conditions surrounding documentation would result in more complete data for future research studies on child health.

P – 24

Comparisons of body shape perceptions with measures of body mass among adolescents in Trinidad

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Objective: To compare body shape perceptions with body mass indices in adolescents in Trinidad.

Design and Method: Cross-sectional study among 293 adolescents (167 males and 126 females) aged 11 to 16 years, from form one in five selected secondary schools in Trinidad. Measured weight and height were used to calculate body mass index (BMI). Classifications were made using BMI for age according to World Health Organization (WHO) 2007 criteria as: underweight, normal and overweight and obese. Adolescents reported self-perceived body shape and perception of healthy male and female body morphology using standard silhouettes. Comparisons of BMI for age and body shape perceptions were done using Chi-squared tests.

Results: Body mass index for age indicated that 5.4% were underweight, 53.0% were normal, 22% were overweight and 19.4% were obese. Self-perceived body shape

and BMI for age were significantly associated, $p < 0.001$. More boys (65.9%) accurately self-perceived body shape comparative to their actual BMI than girls (46.8%). Girls overestimated their body shape (47.6%) by selecting silhouettes categorized as bigger than their actual BMI. The majority of adolescents identified healthy morphology in the same and opposite gender as BMI $> 20 \text{ kg/m}^2$ and $< 25 \text{ kg/m}^2$. Boys showed a bias toward thinness in girls.

Conclusion: The prevalence of adolescent overweight and obesity is high. Self-perception of body shape in boys was more accurate than in girls. Adolescents are knowledgeable of healthy normal body morphology for the same gender and opposite gender. Body shape perceptions may have important implications in healthy weight management and associated risk of obesity co-morbidities.

P – 25

Acute toxicity of non-ionic surfactant vesicles (niosomes) in a Sprague Dawley rat model

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Objective: To determine the acute toxicity of non-ionic surfactant vesicles in a Sprague Dawley rat model and to investigate effect of single or multiple dosing *via* the intraperitoneal (IP) route.

Design and Methods: Niosomes were prepared by the thin-film rehydration method and were subjected to ultracentrifugation to yield a final concentration of 30 mg of span 60/mL niosome suspension. Acute toxicity study was performed using fo-1 OECD test guideline 423 with modifications. Animals for phase 1 study were injected with 600 mg/kg as a single bolus dose, whilst phase 2 animals were administered 120 mg/kg/day for five days. Weights, food intake, water intake, fecal mass and urine output were measured daily. All mortalities, clinical signs, time of onset, duration and reversibility of toxicity were recorded. Gross necrosopies were performed on all animals terminated at 14 days post injection. Student *t*-test was performed for independent samples and $p < 0.05$ was considered statistically significant.

Results: The trials had no treatment related deaths and no toxic signs. There was an initial decrease in weight and food intake with IP niosome injection, although it mimicked the pattern of weight loss in placebo. All other parameters measured showed no statistical significance between the niosome treated group and placebo. Necros-

copy showed no signs of local reaction and there was no observed effect on major organ systems.

Conclusions: Niosomes appear to be non-toxic in the tested doses and experimental conditions. It is therefore postulated that the IP route is a feasible and safe mode of delivery for drug loaded niosomes.