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A quality improvement project: nutritional management of paediatric cancer patients

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Paediatric cancer patients are at high risk of malnutrition, which is associated with adverse outcomes during treatment and survivorship^(1,2). Currently, no clinical nutritional guidelines specific to paediatric cancer are available and best practice is relied upon^(1,2); often theoretical nutritional practice is not executed in the clinical setting as per research recommendations⁽³⁾. The Department of Haematology and Oncology at the Royal Hospital for Sick Children (RHSC) in Edinburgh is involved in a quality improvement project aiming to improve clinical nutritional practice. The objective of this project is to conduct the first clinical audit series; to assess and document the current nutritional practice for paediatric cancer patients at RHSC and establish baseline data, and compare the observed practice to RHSC nutritional standards; thereby identifying areas for nutritional-practice improvement.

The audit was conducted by two researchers over four weeks using one of three different audit tools (depending on data collection location; inpatient (IP), day-care (DC), or outpatient (OP)), by analysing documentation and observing clinical practice, and comparing the collected nutritional practice to recently developed RHSC nutritional standards. The RHSC nutritional standards encompass anthropometry, malnutrition assessment, ward nutritional practices, dietetic review (including dietary advice for neutropenic patients and assessment of refeeding syndrome risk), nutritional bloods, vitamin and mineral supplementation and physical activity. Inclusion criteria: patients aged 0–18 years and undergoing treatment for childhood cancer (ICCC-3 or Langerhans Cell Histiocytosis). Data is purely descriptive and presented as percentages; no statistical analysis was performed.

78 patient records (10 IP, 17 DC and 51 OP) were analysed; 49 % of the 187 audit criteria met the 100 % RHSC Standard, 11 % were between 99–70 % and 40 % were 69 % and below. The areas which were ≤ 69 % of the standard were: height and weight assessment and documentation in day-care; head-circumference, mid-upper arm circumference and tricep skinfold thickness assessment in all locations; assessment of daily weights and select biochemistry for in-patients receiving parenteral nutritional support; dietetic documentation of refeeding-syndrome risk, dietary advice for neutropenia, and estimation of intake, deficit and total energy requirements; monitoring of select nutritional bloods (Vitamins D, A, E, and B₁₂) and vitamin supplementation in patients ≤ 5 years old (only 23 % (n = 5) of ≤ 5 year-old patient records were documented as receiving supplements). Recommendations to improve nutritional practice include staff training, clear delegation of nutritional care, and more user-friendly documentation and completion thereof; if improvements to clinical nutritional practice at the RHSC are not made, current and future patient nutritional care may jeopardise nutritional and clinical patient outcomes.

In conclusion, the RHSC Oncology and Haematology nutritional practice does not meet RHSC standards, emphasising the need for improvement, particularly in anthropometry assessment, dietetic documentation and nutritional biochemistry.

1. Revuelta Iniesta R, Paciarotti I, Brougham MFH, *et al.* (2015) *Nutr Rev* 73, 276–295.

2. Sala A, Pencharz P & Barr RD (2004) *Cancer* 100, 677–687.

3. Selwood K, Ward E & Gibson F (2010) *Eur J Oncol Nurs* 14, 439–446.