Relationship between nutritional status, body composition and quality of life among paediatric cancer patients at Hospital Tunku Azizah, Kuala Lumpur

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ABSTRACT

Introduction: Advancements in paediatric oncology have led to markedly improved survival rates, broadening clinical scope towards enhancing quality of life and nutritional status of patients during treatment. This study aims to explore the association between nutritional status, body composition, and quality of life among paediatric cancer patients across early treatment stages. **Materials and Methods:** A longitudinal study was conducted involving 45 paediatric cancer patients aged 2 to 15 years, recruited via purposive sampling at Hospital Tunku Azizah, Kuala Lumpur. Nutritional assessments were performed at diagnosis, at two- and four-months post-diagnosis. Nutritional status was determined using BMI-for-age z-scores based on WHO Child Growth Standards with anthropometric measurements. Body composition was measured using bioelectrical impedance analysis method, while quality of life was assessed using Pediatric Quality of Life Inventory version 4.0 (PedsQL 4.0). **Results:** Majority of patients (57.8%) were classified as having normal BMI-for-age Z score, 13.3% were severely underweight, 8.9% underweight, 4.4% overweight and 15.6% obese. Quality of life scores across the treatment timeline were 68.7±17.3%, 70.6±16.9% and 64.0±19.8%, respectively, all falling under "sometimes affected" category. Among all domains, physical functioning consistently performed the lowest mean scores of 57.7±30.7%, 61.3±27.6% and 57.0±28.3%. A moderate positive correlation was observed between BMI-for-age z-scores and both total quality of life and physical health summary scores at diagnosis ($p<0.05$). Underweighted patients had lower physical health summary scores at diagnosis ($p<0.05$). Additionally, patients who experienced fat mass increments during two-months post-diagnosis period had lower total quality of life and psychosocial health summary scores at four-months post-diagnosis ($p<0.05$). **Conclusion:** Nutritional status and body composition were significantly associated with quality of life in paediatric cancer patients. These findings support incorporating body composition as part of nutritional monitoring, and revisiting the current nutrition and lifestyle intervention strategies to optimize nutritional status without reliance of fat mass as weight gain during treatment.

Keywords: Nutritional status, body composition, quality of life, paediatric cancer, longitudinal study