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Can the use of a rapid nutrition screening tool facilitate timely dietetic referrals on the acute renal wards? – 

A validation study

A thesis presented in partial fulfilment of the requirements for the degree of

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Yizhou Andrew Xia

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Abstract

Background: The percentage of malnourished patients in the acute renal hospital wards has been reported as 52.6% and associated with increased hospital stay and morbidity. There are currently no published nutrition screening tools that are sensitive enough to detect undernutrition risk in this patient group.

Aim: To develop and validate a rapid nutrition screening tool that is sensitive and specific to recognise renal inpatients at undernutrition risk.

Method: The renal nutrition screening tool (R-NST) was modified from the malnutrition screening tool (MST) that has been validated in the acute care setting. It includes the traditional risk variables such as involuntary weight loss and reduction in food intake, as well as biochemical measures to increase the effectiveness of recognising undernutrition risk. It was designed in three simple, accumulative steps. The new R-NST was validated using a prospective, blind comparison to a gold standard study design (N = 122). The undernutrition risk of each participant identified by the research assistants using the R-NST was compared to the nutritional status independently assessed by the researchers using the 7-point subjective global assessment (SGA) as a gold standard and hand grip strength (HGS) as a functional indicator. The R-NST was autonomously undertaken by nursing staff to determine its feasibility as a routine screening on ward level.

Results: The SGA and R-NST tools classified 63.9% and 68.0% of participants as malnourished or at undernutrition risk, respectively. The R-NST was valid to detect undernutrition risk (sensitivity = 97.3%, specificity = 74.4%, positive predictive value (PPV) = 88.0%, negative predictive value (NPV) = 93.6%) compared to the SGA. The HGS in malnourished participants were lower than those that are well nourished in either women (p = 0.001) or participants aged under 65 years (p = 0.009). The R-NST showed ability to recognise participants requiring dietetic intervention due to their renal conditions. The compliance rate in the R-NST screening by the nursing staff was low (22.6%).
Conclusion: The R-NST is a good diagnostic tool for identifying acute renal patients at undernutrition risk and facilitating timely dietetic referral. Further research is warranted to explore innovative yet effective interventions to enhance nutrition screening compliance in ward practice.

Key words: nutrition screening tool, undernutrition, renal failure
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