Unveiling the hidden burden of malnutrition in tuberculosis: A multifaceted evaluation using MUST and PG-SGA

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Abstract

Background: Tuberculosis (TB) remains a significant public health burden, especially in resource-limited countries. Malnutrition is a significant concern among tuberculosis patients, exacerbating symptoms and impeding recovery. This study aims to evaluate the risk of malnutrition in TB patients using the Malnutrition Universal Screening Tool (MUST) and Patient-Generated Subjective Global Assessment (PG-SGA), ultimately informing targeted nutritional interventions to enhance treatment outcomes.

Methods: This cross-sectional study conducted among one hundred ninety-four adult (18-65 years) tuberculosis patients in Bihar, India, to evaluate the risk of malnutrition using the MUST and PG-SGA tools. Data on demographics, clinical profiles, and anthropometrics were collected via structured questionnaires and measurements. Statistical analyses included ANOVA, chi-square tests, and Cohen's kappa for agreement between MUST and PG-SGA assessments.

Results: The results showed a high prevalence of malnutrition risk, with MUST detecting 74.2% and PG-SGA detecting 88.1% 44 in the overall population. Underweight patients were disproportionately affected, with MUST identifying 96.5% and PG-SGA identifying 88.3% as high-risk. The study highlights the limitations of BMI alone in assessing malnutrition risk and reveals notable disagreement between MUST and PG-SGA in risk classification across BMI categories ($\kappa = 0.010$, $p < 0.001$). These results emphasize the need for regular nutritional assessment and targeted interventions in tuberculosis patients based on comprehensive tool evaluations.

Conclusions: The study highlights the importance of regular nutritional assessments in TB management. A multifaceted evaluation using both MUST and PG-SGA provides a more comprehensive risk assessment than BMI alone. These findings emphasize the need for comprehensive nutritional evaluations and personalized nutrition plans to address

malnutrition risk in TB patients, ultimately enhancing patient recovery, patient care and clinical outcomes.