

# ASSOCIATION BETWEEN THIGH CIRCUMFERENCE AND TRADITIONAL ANTHROPOMETRIC PARAMETERS IN CRITICALLY ILL CHILDREN

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**Background:** Traditional anthropometric parameters are widely used in nutritional assessment of critically ill children. However, they can be difficult to obtain. Thus, it is necessary to search for new parameters, such as thigh circumference (TC).

**Objective:** To evaluate the association between TC and traditional anthropometric parameters in critically ill children.

**Methods:** A prospective cohort study of critically ill children aged 1 month to 14 years of age, of both sexes, admitted to a Pediatric Intensive Care Unit of a tertiary hospital. The anthropometric assessment, performed at admission (T1) and 7 days (T7), included TC, mid-upper arm circumference (MUAC), triceps skinfold thickness (TSF), mid-upper arm muscle circumference (MUAMC) and mid-upper arm muscle area (MUAMA). Spearman correlation and Wilcoxon's test were applied, using  $p < 0.05$  as significant.

**Results:** There were evaluated 138 patients, 62.3% male, median age of 1.86 years (interquartile range 0.37-7.3). In T1, there was a significant correlation between TC and MUAC ( $r=0.91$ ), MUAMC ( $r=0.90$ ) and MUAMA ( $r=0.90$ ). After adjustment for age and sex, TC remained associated with MUAC ( $p < 0.001$ ). In T7, there were significant correlation between TC and MUAC ( $r=0.91$ ), MUAMC ( $r=0.89$ ), MUAMA ( $r=0.92$ ). All anthropometric measurements were significantly lower in T7 compared to T1.

**Conclusions:** TC was associated with the traditional anthropometric parameters, suggesting the necessity for more studies to possible implementation and establishment of reference values of this measure in nutritional status assessment protocol of critically ill children.