

## ABSTRACT

RISK FACTORS OF MILIARY TUBERCULOSIS IN CHILDREN  
AT DR SOETOMO HOSPITAL 2010 - 2015

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**Introduction:** Miliary tuberculosis (TB) arises from the dissemination of the *Mycobacterium tuberculosis* bacteria into multiple organs, resulting in severe clinical symptoms and complications, including death. The mortality rate is still high, therefore identifying risk factors for miliary TB is important. This study analyzed the association of several proposed risk factors of miliary TB in children.

**Methods:** A case-control study of children (0-14 years old) with miliary TB was conducted in Dr. Soetomo Hospital from 2010 to 2015. Data were taken from medical records. Cases were defined as children diagnosed with miliary TB, and controls as children diagnosed with pulmonary TB with score  $\geq 6$ . Exclusion criteria were incomplete medical records. Cases were taken from total population; controls were taken using purposive sampling with case-control ratio of 1:1. Factors analyzed were age, nutritional status, BCG immunization status, and history of contacts. Statistical analysis was done with Chi-square and logistic regression. P value of  $< 0.05$  was considered statistically significant.

**Results:** Seventy-two children were analyzed, 36 cases and 36 controls. Nutritional status was found significantly associated with miliary TB in children ( $p = 0.018$ ,  $OR 3.182$ ,  $95\%CI 1.206 - 8.398$ ) in both bivariate and multivariate analysis. The probability of a child developing miliary TB if the nutritional status is moderate or severe undernutrition is 76.09%. Other factors such as age, BCG immunization status, and history of contacts were not significantly associated with miliary TB.

**Conclusion:** Nutritional status is significantly associated with miliary TB in children, and moderate or severe undernutrition increases the risk for developing miliary TB.

**Keyword:** miliary tuberculosis, children, case-control, risk factors