

INFECTIOUS DISEASES

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Atypical lymphocyte as a predictor of dengue illness among pediatric patient admitted in a tertiary institution

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Statement of the Problem: Diagnosis of dengue during febrile stage has been challenging. There are several existing diagnostics however most are costly and not available in many tropical countries. Atypical lymphocytes (AL) or reactive lymphocytes are activated non-malignant lymphocyte seen in the peripheral blood smear. There were studies mentioning atypical lymphocytes as an adjunct tool in the diagnosis of dengue infection and could be used as marker of disease severity.

Methodology & Theoretical Orientation: This is a retrospective case control study of randomly selected pediatric patient admitted in a tertiary institution with confirmed dengue fever cases and other febrile illness (OFI). There were 296 who were able to meet the criteria. CBC results were reviewed on the day of admission and day 1 afebrile. Presence and absence of atypical lymphocytes was noted on each patient.

Findings: Significantly more proportion of subjects with dengue illness has atypical lymphocyte than those with other febrile illness ($p < 0.0001$). Of the 155 confirmed cases of dengue, a total of 137 (88.4%) of patients have atypical lymphocyte and 18 (11.6%) found negative. The positive and negative predictive values of atypical lymphocytes were 86.2% and 86.9%, respectively. However no difference was noted when proportion of atypical lymphocyte was compared across dengue severity. Finally, atypical lymphocytes are a significant predictor of dengue fever as derived from logistic regression analysis. The results showed that the risk of a patient with atypical lymphocyte was 41.16 times higher for dengue than those without atypical lymphocyte.

Conclusion & Significance: This study shows that the presence of atypical lymphocyte is highly associated with dengue illness. Atypical lymphocyte can be useful in predicting dengue illness. However additional study on the actual quantity of AL is required before the information can be used in usual clinical settings.

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