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# Effects of pneumonia and malnutrition on the frequency of micronuclei in peripheral blood of pediatric patients

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## Abstract:

The aim of this study was to evaluate the effects of bacterial pneumonia and malnutrition on the frequency of micronuclei (MN) in peripheral blood of pediatric patients through flow cytometric analysis. The study was an analytical case-control study carried out on 35 malnourished children with bacterial pneumonia and 20 well-nourished children with bacterial pneumonia, in addition to 20 healthy children as controls. Complete physical examination including; anthropometric measurement, Chest roentgenograms were done for all cases. Assessment of MN was done by FACSCalibur flow cytometry. The frequency of micronucleated reticulocytes (MN-RETs) was higher both in the malnourished children with pneumonia and well-nourished children with pneumonia than the controls. Within the malnourished children with pneumonia, patients with kwashiorkor had more micronucleated mature erythrocytes (MN-RBCs) and MN-RETs than patients with marasmus. In conclusion: Pneumonia is associated with an increased frequency of MN and this increment is more pronounced in children with severe malnutrition especially kwashiorkor group.

## Keywords:

Pneumonia, malnutrition, micronuclei, flow cytometry, children

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