Hyponatremia as a Predictor of Adverse Outcome in Children With Severe Lower Respiratory Tract Infection in Tribhuvan University Teaching Hospital (TUTH), Nepal

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Machhindra Lamichhane
Dhaulagiri Zonal Hospital

✉ archanamachhindra2045@gmail.com *Corresponding Author*

Laxman Shrestha
Institute of medicine, Maharajgunj Medical Campus

Luna Bajracharya
Maharajgunj Medical Campus, Kathmandu

Archana Bagale
Yeti Health Science Academy

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Abstract

Introduction: Lower respiratory tract infection (LRTI) is one of the major causes of mortality in children with estimated 1 million deaths every year. Hyponatremia is the most common electrolyte abnormality seen in LRTI.

Objective: To find association of hyponatremia (serum sodium<135meq/l) with severe LRTI. **Design:** Prospective cross sectional study

Settings: Pediatric Emergency, Ward and Pediatric Intensive Care Unit of Tribhuvan University Teaching Hospital(TUTH)

Subjects: Children between 2 months to 16 years presenting with cough for less than 3 weeks, fast breathing and chest indrawing.

Methods: Children between 2 month to 16 years of age having cough, fast breathing and chest indrawing admitted in emergency, ward or PICU of TUTH were screened and among them, children having pediatric respiratory severity score of 4-5 were enrolled in the study. Serum sodium was sent during admission and collected within 2 hours. Daily follow up was done to find need of respiratory support, duration to resolve hypoxia, total duration in hospital and final outcome of patient. Statistical test applied were Chi-square test and Fisher exact test.

Results: 47.5% of study population had hyponatremia, of whom 65.79% had mild hyponatremia 26.31% had moderate and 7.89%had severe hyponatremia. Association of hyponatremia with need of non rebreathing face mask ($p=0.001$), ventilator ($p=0.009$), duration of hospital stay ($p=0.047$) were significant. The study also found the association of severity of hyponatremia with need of non rebreathing facemask ($p=0.001$),ventilator ($p=0.01$), outcome ($p=0.001$), duration of stay (0.002). Mean time to resolve hypoxia in children with hyponatremia (4.5 days) was longer compared to normal sodium (2.58 days). Four patients died during the study period and all of them had hyponatremia.

Conclusion- Association of hyponatremia and severity of hyponatremia in severe LRTI with need of non-rebreathing face mask, ventilation, outcome, duration of stay was significant.

Full Text

Due to technical limitations, full-text HTML conversion of this manuscript could not be completed.

However, the manuscript can be downloaded and accessed as a PDF.

Figures

Figure 1

Flow chart of screened and enrolled cases in the study

Figure 2

Age of study population

Figure 3

Sex of study population

Supplementary Files

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