

The Epidemiology of Critical Respiratory Diseases in Ex-premature Infants in Vietnam: A Prospective Single-Center Study

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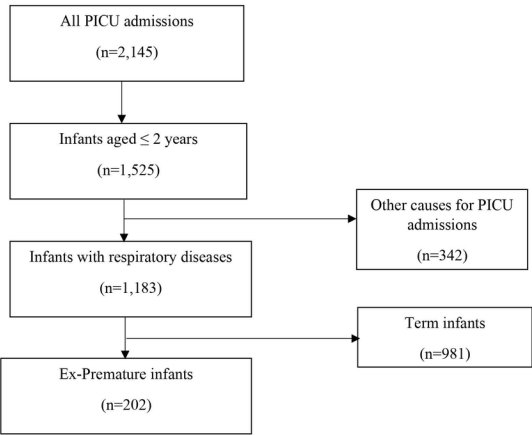
Abstract

Introduction This study aimed to describe the epidemiology and etiologies of critical respiratory diseases of ex-premature infants (EPIs) admitted to pediatric intensive care unit (PICU). In addition, we described the outcomes and resources used of EPIs and identified associated factors for mortality of these infants. **Materials and Methods** Infants [?]2 years old with acute respiratory illnesses admitted to PICU of Vietnam National Children's Hospital from November 2019 to April 2021 were enrolled. We compared respiratory pathogens, outcomes, and PICU resources utilized between term infants and EPIs. Univariate followed by multivariable regression analysis were used to evaluate the association between risk factors and mortality. **Results** Among 1,183 patients aged [?]2 years were admitted for critical respiratory illness, 202 (17.1%) were EPIs. Respiratory viruses were detected in 53.5% and 38.2% among EPIs and term infants, respectively. Compared to term infants, a higher proportion of EPIs required mechanical ventilation (MV) (66.5 vs. 85.6%, $p<0.005$) and vasopressor support (10.7 vs. 37.6%, $p<0.005$). EPIs had a longer median duration of PICU stay (11.0 [IQR: 7; 22] vs. 6.0 days [IQR: 3; 11], $p=0.09$), hospital stay (21.5 [IQR: 13; 40] vs. 10.0 days [IQR: 5; 18], $p<0.005$) and case fatality rate (31.3% vs. 22.6%) compared to term infants. In EPIs, PIM3 score [(aOR): 1.51; 95% (CI): 1.30-1.75] and PELOD2 score at admission (aOR: 1.41; 95% CI: 1.08-1.85) were associated with mortality. **Conclusion** EPIs with critical respiratory illnesses constituted a significant population in the PICU and required more PICU support and had worse clinical outcomes compared to term infants.

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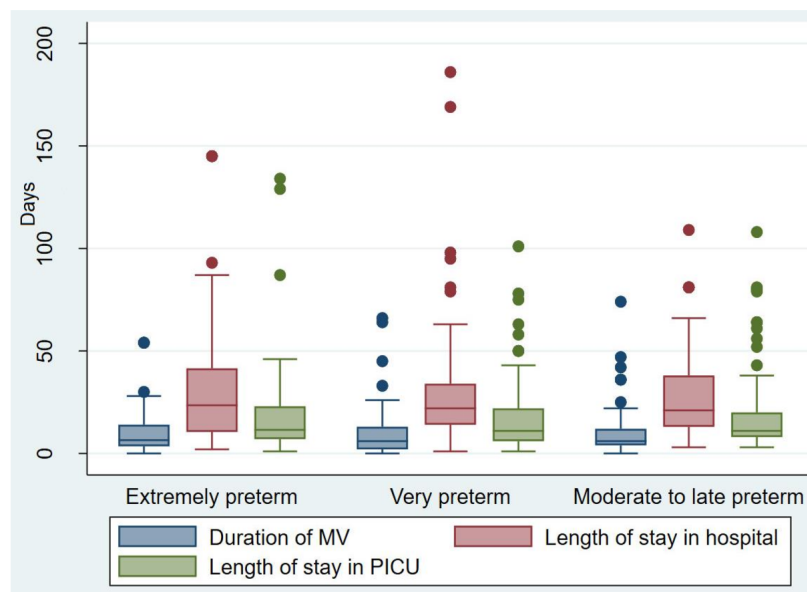
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Figure 1: Recruitment flow



PICU: Pediatric intensive care unit

Figure 2: Outcomes of ex-premature infants stratified by gestational age



* The differences in all outcomes (duration of MV, length of stay in PICU and length of hospital stay) among the 3 groups were not statistically significant.

MV: mechanical ventilation; PICU: pediatric intensive care unit

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