

Outcomes of *M. pneumoniae* pneumonia with co-infection

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Abstract

Background: *Mycoplasma pneumoniae* pneumonia (MPP) is often complicated with co-infections that worsen the prognosis, but the outcomes in pediatric cases are unclear. The aim of this study is to investigate the association of co-infection and outcomes in severe MPP that occurs in childhood. Methods: This retrospective study included 184 pediatric cases of severe MPP that were managed at our hospital (between January 2014 and December 2017). The cohort was divided into the single *Mycoplasma pneumoniae* infection, co-infection with a noxa other than *M. pneumoniae*, and co-infection with two or more noxae other than *M. pneumoniae* groups. The demographic and clinical information of the patients was compared via statistical analysis. Results: The incidence of co-infections was high at 64.1%. Cytomegalovirus and Epstein-Barr virus were the most common causes of co-infection. According to the findings of binary logistic regression analysis, the presence of more than one pathogen (other than *M. pneumoniae*) was positively associated with the score determined from Pediatric Risk of Mortality III ($\beta = 0.760$, odds ratio [OR] = 2.139, 95% confidence interval [CI] = 1.391–2.390, $P = 0.001$), Pediatric Critical Illness Score ($\beta = 1.203$, OR = 3.328, 95% CI = 1.723–6.731, $P = 0.000$), and total length of hospital stay ($\beta = 0.730$, OR = 2.075, 95% CI = 1.404–3.066, $P = 0.000$). Conclusion: Viral and bacterial co-infection in pediatric cases of severe MPP is positively associated with hospitalization period and disease severity, and ultimately, may increase the chances of severe illness and death among children.

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