FACTORS ASSOCIATED WITH DIAGNOSIS OF BACTERIAL PNEUMONIA IN CHILDREN OF NORTHERN THAILAND

Charung Muangchana

National Vaccine Committee Office, Department of Disease Control, Ministry of Public Health, Nonthaburi, Thailand

Abstract. The purpose of this study was to determine the association between common clinical features in general practice, and chest radiographic findings among children with suspected bacterial or viral pneumonia. The study was prospective hospital-based carried out in Northern Thailand, from 2000 to 2001. One thousand three hundred ninety-six children under age five years admitted with suspected pneumonia were enrolled in the study. Multinomial logistic regression was used to analyze the radiographic results, clinical outcomes, white blood cell (WBC) counts, percent poly-morphonuclear cells (%PMN), duration of illness before admission, body temperature, age, and gender as variables. Chest radiographs were read by a radiologist following the recommendations of the WHO regarding chest radiographic reading. Chest radiographic findings were classified as normal, viral or bacterial. Fifty-nine children (4.2%) had normal radiographic findings, 1,233 (88.3%) had a viral appearance on chest radiograph, and 104 (7.5%) had a bacterial appearance of chest radiograph. On unadjusted analysis, WBC count, %PMN, body temperature, duration of illness before admission, and gender were strongly associated with outcomes ($p<0.05$). On multivariate analysis, only %PMN, duration of illness before admission, and gender were associated with the findings of the chest radiograph. A PMN results of 40% to 70% [RRR, 5.64; 95% confidence interval (CI), 2.14-14.82], PMN >70% (RRR, 5.11; 95% CI=1.71-15.22), and duration of illness >4 days (RRR, 5.19; 95% CI=1.79-15.06) were positively associated with bacterial radiographic profile. Female (RRR, 0.50; 95% CI=0.29-0.85) was negatively associated with viral radiographic profile. WBC counts in children admitted with suspected pneumonia were not associated with chest radiograph findings, but %PMN and duration of illness before admission were positively associated with a bacterial radiographic result.

Correspondence: Charung Muangchana, National Vaccine Committee Office, Department of Disease Control, Ministry of Public Health, Tiwanond Road, Nonthaburi 11000, Thailand.
Tel: 66 (0) 2590 3198-9; Fax: 66 (0) 2591 8425
E-mail: charungm@hotmail.com