

## INFLAMMATORY MARKERS IN CHILDREN HOSPITALIZED DUE TO INFLUENZA

August Wrotek<sup>1,2</sup>, Edyta Zawłocka<sup>1,2</sup>, Małgorzata Czajkowska<sup>1,2</sup> and Teresa Jackowska<sup>1,2</sup>

<sup>1</sup>Department of Pediatrics, Centre of Postgraduate Medical Education, Marymoncka 99/103, 01-813 Warsaw, Poland, e-mail: tjackowska@cmkp.edu.pl,

<sup>2</sup>Department of Pediatrics, Bielanski Hospital, Ceglowska 80, 01-809 Warsaw, Poland, e-mail: tjackowska@cmkp.edu.pl

**Background:** The objective of the trial was to retrospectively analyze children hospitalized due to influenza and assess correlation between inflammatory markers (IM) and clinical course of pneumonia.

**Material and methods:** 294 children aged 13 days-207 months (median 27 months) was hospitalized due to influenza. CRP, procalcitonin, white blood cells count (WBC) and absolute neutrophil count (ANC) were correlated with the need for antibiotics, risk of complications (pneumonia, transfer to tertiary care center), prolonged length of stay (LOS).

**Results:** Patients who received **antibiotics** had higher: WBC (9.2 vs. 7.25, **p<0.01**), ANC (4.23 vs. 3.33, **p<0.01**), CRP (9.9 vs. 4.2 mg/dL, **p<0.01**), and procalcitonin (0.28 vs. 0.16 ng/dL, **p<0.01**). In predicting antibiotic therapy ROC curve analysis showed AUC=0.647 (95%CI: 0.576-0.718, **p<0.01**) for procalcitonin (37% sensitivity and 87% specificity) for cut-off value (0.44ng/dL); AUC=0.628 (95%CI: 0.559-0.697, **p<0.01**) for WBC (23% sensitivity and 95% specificity) for value of  $16.8 \times 10^9/L$ ; AUC=0.593 (95%CI: 0.523-0.662, **p<0.01**) for ANC (12.3% sensitivity and 97.8% specificity) for value of  $13.3 \times 10^9/L$ . Procalcitonin was 0.52ng/dL (N=0.5ng/dL) showed 30% sensitivity and 90% specificity. CRP had no significance in predicting antibiotics therapy.

Respective value for **complications** were: procalcitonin-AUC=0.58 (**p=0.029**), WBC-AUC=0.65 (**p<0.01**), ANC-AUC=0.6 (**p<0.01**), while still insignificant for CRP. For **pneumonia**: procalcitonin-AUC=0.58 (**p=0.0474**), WBC-AUC=0.635 (**p<0.01**), ANC-insignificant, CRP-AUC-0.408(**p=0.022**).

For **prolonged LOS** only, WBC was significant (AUC=0.612; **p<0.01**), while no other significances were found.

**Conclusions:** Inflammatory markers are helpful in assessment of patient's status. Especially procalcitonin normal range value seems reasonable cut-off point in signalling need for antibiotics.

CMKP grant no. 501-1-20-19-18