

POCT WBC Reduces Antibiotic Prescription – A Prospective Pediatric Study

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Introduction: The aim of this study was to test the hypothesis that usage of a point-of-care leukocyte count as a complement to the clinical investigation would significantly decrease the prescription of antibiotics for children with flu and flu-like syndrome.

Method: A prospective randomized clinical trial on children with flu or flu-like syndrome and fever for at least three days in primary care pediatric doctor's offices was performed in the period October 2012 – April 2013. 23 pediatricians on 23 different sites, well distributed in the region of Campania, Italy, participated in the study. The children were randomized into two groups; one using a point-of-care leukocyte count as guidance and one prescribing antibiotics according to normal procedure. The white blood cells were counted directly at the doctor's office with the HemoCue® WBC system. Each pediatrician reported objective data and performed the clinical evaluations during the patient's visit. All patients were followed up after 48 hours and after 7 days.

Results: 792 patients were randomized into two well-balanced groups. In one group (n= 437) the leukocyte count was measured point-of-care. 56 patients had a leukocyte count $>15,000$ /mm³ and received antibiotics, the rest were treated symptomatically. At a follow-up visit after 48 h, additional 44 children received antibiotics. In the control group (n= 355) antibiotics were prescribed according to normal procedures (NICE). The reduction of antibiotic prescription was 76% where the leukocyte count was included.

Conclusion: By adding a point-of-care leukocyte count as a part of the clinical investigation, the prescription of antibiotics in a pediatric setting could be significantly reduced. The decrease in antibiotic usage gave no influence on recovery, complications or other medical outcome.

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