

## WORK-UP IN THE LABORATORY-BASED SURVEILLANCE OF COMMUNITY ACQUIRED INVASIVE BACTERIAL INFECTIONS (BINET) IMPROVED THE DIAGNOSIS OF INVASIVE INFECTIONS

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**The aim.** To assess the diagnostic benefits after implementing the Laboratory-Based Surveillance of Community Acquired Invasive Bacterial Infections (BINet) at the Department of Pediatrics.

**Materials.** In 2008-2013 (for 6 years), 234 samples from 190 patients with a suspected invasive infection were submitted to the BINet. The study group included 62.1% of children with community-acquired pneumonia (CAP), 7.9% with bacterial meningitis, 18.5% with a generalised infection of an unknown origin, and 11.5% with severe infections in different localisations.

**Results.** Blood cultures were performed in all children; however, positive results were observed/present in only 9 (4.7%). In six cases, the infection was caused by the *Streptococcus pneumoniae* (CAP with bacteraemia), in one by the *Escherichia coli*, in one by the *Neisseria meningitidis* and in one by the *Streptococcus pyogenes* (sepsis). Only one of the eight performed cultures of the pleural fluid showed bacterial growth (*Streptococcus pyogenes*). Lumbar puncture was performed in 57 cases. Three positive cultures were obtained (non-enveloped strains of the *Hemophilus influenzae*, *Streptococcus mitis*, *Neisseria meningitidis*).

In seven children, the BINet analyses allowed to diagnose the following: three CAP cases caused by the *Streptococcus pneumoniae*, three meningitis cases caused by various bacteria (*Listeria monocytogenes*, *Neisseria meningitidis*, *Streptococcus pneumoniae* serotype 15B), one generalised infection (*Escherichia coli*). Thanks to the BINet identification, the diagnosis was changed from the *Streptococcus mitis* to the *Streptococcus pneumoniae* serotype 15B.

**Conclusions.** Expanding routine microbiological diagnostics with molecular examinations increased the diagnostic sensitivity and allowed us to administer fast and targeted treatment.

[1]Supported by MCPE grant 506-1-20-01-14