Prevalence and Etiology of Serious Bacterial Infections in Febrile Infants Younger than 60 Days of Age, in a Swedish Pediatric Emergency Department

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Background

Infants with fever without focus have a risk for a serious bacterial infection (SBI). The definition of SBI includes urinary tract infection (UTI), bacteremia and bacterial meningitis. Recent publications report an epidemiological shift of these infections with UTI accounting for 90% of SBIs and meningitis for no more than 2%. Around 3 decades ago, UTI accounted for 40-50% and meningitis for 0-14%. *Escherichia coli* is reported to be the main causative agent of SBIs while the prevalence of Group B *Streptococcus* (GBS) and *Listeria Monocytogenes* has decreased.

Methods

Medical records were reviewed of full-term infants <60 days of age without comorbidities who searched for care because of fever at the pediatric emergency department (PED) at Skåne University Hospital, Lund from the 1st of January 2014 until the 31st of December 2016. Reviewed factors were temperature, vital signs, blood, urine and cerebrospinal fluid (CSF) cultures, registered diagnose and outcome.

Results

Of the 256 infants included, 17 (6,7%) were diagnosed with an SBI. Thirteen (5.1%) had an UTI, 2 (0.8%) isolated bacteremia, 1 (0,4%) combined UTI and bacteremia and 1 (0.4%) combined bacterial meningitis and bacteremia. UTI accounted for 83% of all SBIs. *E. coli* was isolated in 11/14 (79%) of the positive urine cultures. GBS caused the only case of bacterial meningitis/bacteremia and was isolated in 2 urine cultures. No cases of *L. monocytogenes* were isolated.

Age in days	Total Number of Infants N	UTI N (%)	Isolated Bacteremia N (%)	UTI + Bacteremia N (%)	Bacterial meningitis + Bacteremia N (%)	SBI Total N (%)
0-29	83	2 (2,4)	2 (2,4)	1 (1,2)	1 (1,2)	6 (7,2)
30-59	183	11 (6,0)	0 (0)	0 (0)	0 (0)	11 (6,0)
Total	256	13 (5,1)	2 (0,8)	1 (0,4)	1 (0,4)	17 (6,7)

Conclusions

This study showed that UTI was the predominant SBI among febrile infants, while the prevalence of bacterial meningitis and isolated bacteremia was very low. *E. coli* was the main pathogen while no cases of *L. Monocytogenes* were identified

Table. Prevalence of SBIs in febrile infants <60 days of age presenting at the pediatric emergency department at Skåne University Hospital, Lund from 1st of January 2014 until 31st of December 2016.