DIAGNOSTIC VALUE OF PARENTAL CONCERN AND CLINICIAN’S GUT FEELING IN RECOGNITION OF SERIOUS BACTERIAL INFECTIONS IN CHILDREN WITH FEVER ATTENDING PAEDIATRIC EMERGENCY DEPARTMENT

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BACKGROUND	METHODS
<p>Fever in children is one of the most common reasons for seeking medical attention (1). Although the cause of fever in most cases is self-limiting viral infections, in 4 to 25% of cases seen in Emergency departments (ED) it is caused by serious bacterial infections (SBI), which are a significant cause of mortality worldwide (2). Studies in primary care have shown that parental concern and clinician’s gut feeling that there is something wrong has been associated with increased likelihood that the child will be diagnosed with SBI (3-4).</p>	<p>Children with fever attending the emergency department of Children’s Clinical University hospital in Riga between April 2017 and March 2018 were enrolled prospectively. Data were collected via parental and clinician questionnaires. Clinician’s “gut feeling” was defined as feeling that the child has a serious illness, even if the clinician is unable to explain why (3). The clinicians’ questionnaire was filled before any investigation results were available. “Parental concern” was defined as impression that this illness is different from the child’s previous illnesses (4). SBI included bacterial meningitis, sepsis, bacteraemia, pneumonia, urinary tract infection, appendicitis, bacterial gastroenteritis, and osteomyelitis (2). Positive likelihood rate was calculated to evaluate the diagnostic value of “gut feeling” and parental concern, possible triggers for “gut feeling” were determined by Odds Ratio.</p>
AIM	
<p>The aim of this study is to assess the diagnostic value of parental concern and gut feeling at the emergency department of a tertiary hospital.</p>	

RESULTS

In total, 217 patients were enrolled, 105(48.4%) were boys. 71(32.7%) of patients developed SBI. 197 clinician and 159 parental questionnaires were analysed. 143(89.9%) of the respondents of parental questionnaire were mothers. 93(47.2%) of the doctors were certified paediatricians, the rest of them were paediatric residents. The diagnostic power of “gut feeling” and “parental concern” is displayed in table 1. The clinical features associated with “gut feeling” are listed in table 2.

Table 1. Diagnostic power of “gut feeling” and parental concern

	Sensitivity, %	Specificity, %	Positive likelihood ratio (95% CI)	Chi-square (P value)
“Gut feeling”				
All doctors	53.4	83.9	3.3 (2.1-5.2)	28.8 (0.000)
Certified paediatricians	54.5	91.7	6.5 (2.7-16.0)	24.4 (0.000)
Paediatric residents	50.0	75.0	2.0 (1.1 to 3.6)	4.8 (0.028)
Parental concern (“different illness”)				
	76.5	39.8	1.3 (1.0-1.6)	4.1 (0.044)

Table 2. Clinical features associated with “gut feeling”

Clinical features	Sensitivity, %	Specificity, %	Odds ratio (95% CI)	P value *
Ill appearance	64.2	87.8	12.8 (6.0-27.4)	0.000
Drowsiness	46.2	78.3	3.1 (1.6-6.1)	0.001
Refusal of food	32.0	89.1	3.9 (1.7-8.6)	0.001
Abnormal breathing sounds	19.2	92.8	3.0 (1.2-7.8)	0.016
Poor peripheral circulation	9.8	99.3	15.0 (1.7-131.7)	0.006

* Pearson’s Chi-Square and Fisher’s exact test were applied as appropriate. P value of less than 0.05 was considered statistically significant.

CONCLUSION

“Gut feeling” was useful in recognizing SBI, the diagnostic value was higher when stated by experienced paediatricians. Clinical features associated with “gut feeling” were ill appearance, drowsiness, refusal of food, abnormal breathing sounds, and poor peripheral circulation. Parental concern in the aspect of currently used definition was not significantly predictive of SBI.

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