Abstract 7011

Evaluation of T2MR in a Greek university intensive care unit

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Background: T2 Magnetic Resonance (T2MR) is a novel method of detecting ESKAPE pathogens in blood speciments. T2MR test is a fully automated procedure which amplifies microbial cell-associated DNA using a thermostable polymerase and target-precific primers and detects signals by amplicon-induced agglomeration of superparamagnetic particles and T2 magnetic resonance. We aim at evaluating the performance of this method in an ICU population.

Materials/methods: This is a prospective observational study that took place in a 35 bed university ICU were surveillance data report 40 % ESCAPE pathogens in BCs. Inclusion criteria were age >18 y.o.,and clinical suspicion of a new bloodstream infection. Patients who were unsalvageable were excluded. A sample for T2MR and a blood culture (BC) sample were collected simultaneously from all patients. The T2MR test was run according to the manufacturer's guidelines and the blood cultures were processed according to the hospital standard procedures.

Results: 26 patients were included in the study. The results of the T2MR and BCs are presented in the Table. In 20 cases the results of T2MR were in concordance with the BCs. In the remaining 6 cases, the BCs were negative while the T2 MR detected one or more ESKAPE pathogens. There were no false negative results. Mean time to culture positivity was 84 hours while mean time to T2MR result was 3.5 hours. The negative predictive value of T2MR was 100%

T2MR	BC	Number of cases	ESKAPE organisms
-	-	16	
+	+	4	*P aeruginosa n =1* *K. pneumonia n=2* *E. coli n=1*
+	-	6	*P aeruginosa n=2* *K. pneumonia n=3* *E. coli n=1* *A. baumannii n=3*
-	+	0	
(+) ESKAPE pathogen detected (-) Escape pathogen not detected			

Conclusions: T2MR detects more pathogens than BCs and provides a quicker detection time that could shorten the time to targeted therapy. The number of positive T2MR cases with negative BCs can be attributed to the high sensitivity of T2MR compared to the gold standard (BCs).

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