P1207
Paper Poster Session
Best practices of hospital antimicrobial stewardship interventions

A 72h intervention improves rate of optimal antibiotic therapy in patients with sepsis

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Background: Rapidly starting an empiric antibiotic in patients with sepsis is correlated to improve survival. Few studies investigated the efficacy of interventions for optimization of therapy after the start of antibiotics. Objective of the study was to evaluate whether re-evaluation at 72h from starting empirical therapy of patients with positive blood cultures can improve the treatment optimization, reduce hospitalization length and improve survival

Material/methods: Prospective, monocenter, cohort study. A bedside antibiotic stewardship team (AST) was implemented in Nov 2012 in a 1100-bed university hospital in Rome. Study groups: 1) AST was called by ward physician for patients with positive blood cultures (standard AST) 2) AST was called by microbiologist immediately after a pathogen was isolated from blood cultures (AST + call) 3) AST was called by microbiologist immediately after a pathogen was isolated from blood cultures and all cases was re-evaluated after 72h from starting antibiotic therapy to optimize therapy (AST + call +72hR). Type of intervention was defined: 1) Not feasible (too serious clinical conditions or already started optimal therapy) 2) Intervention (discontinuation of drugs not covering the isolated germ or switch to a narrower antibiotic spectrum or spectrum broadening) 3) Intervention not done even when feasible. ICU and haematology department infections were not included in this study.

Results: At November 2015, 743 patients with positive blood cultures were enrolled. Median age: 67.5 yrs (SD 15.7); 58.8% males. Mean APACHE II: 12.1 (SD 6.1). 49% had a CVC at the time of diagnosis. In 65.8% of cases the clinical presentation was a SIRS, in 28.1% a severe sepsis and in 6.2% a septic shock. A 72h-intervention was done in 41.5% patients of standard AST, 36.5% in AST + call and 76.7% in AST + call +72hR ($p<0.0001$).

	Standard AST (n=197)	AST + call (n=233)	AST + call + 72hR (n=313)	p
Time to starting antibiotic therapy	0.93 (1.7)	0.65 (1.3)	0.5 (1.1)	0.006*

% of Effective therapy (SD)	94.3 (17.9)	91.2 (21.2)	92.6 (15.2)	0.22
% of Optimal therapy (SD)	58.9 (42.0)	51.6 (42.7)	71.9 (30.6)	<0.001
Duration of antibiotic therapy, mean days (SD)	21.4 (15.7)	19.6 (13.5)	17.7 (11.5)	0.009
Length of hospital stay, mean, days (SD)	29.1 (28.2)	26.5 (24.2)	24.2 (20.7)	0.07
N. of deaths (%)	51 (25.9)	48 (20.6)	67 (21.4)	0.37

*Standard AST vs AST+call p=0.05

Conclusions: A 72h re-evaluation was correlated to a more rapid start of antibiotics, a higher rate of optimal therapy, a shorter duration of total therapy and a trend towards a shorter length of hospitalization. The immediate call from microbiologist was correlated to a timely start of antibiotics.