

Session: P101 What is hot in *Staphylococcus aureus* bloodstream infection ?

Category: 2b. Severe sepsis, bacteraemia & endocarditis

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Staphylococcus aureus bacteriuria: don't miss the infective endocarditis

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Background: The detection of *Staphylococcus aureus* in urine is often interpreted as a "staphylococcal urinary tract infection". However, considering that *S. aureus* has no or weak tropism for the urinary and digestive epithelia, a bloodstream infection with secondary renal infection is more likely (except in the case of a recent procedure concerning the urinary tract).

We aimed to determine among patients presenting with a *S. aureus* bacteriuria the proportion who also had i) a bacteremia with the same germ and ii) an infective endocarditis.

Material/methods: Records of patients with urine positive for *S.aureus* culture between 2007 and 2011 were retrospectively reviewed. Among others, results of blood culture and echocardiography (if any) were collected. The diagnosis of infectious endocarditis relied on Duke modified criteria.

Results: 557 patients (69.6±21 years, 340 men and 217 women) were included. Seventy-six patients had undergone a urinary tract surgical procedure (surgery of either kidney, prostate, bladder, ureteral, urethral, and ureteral stent setting) in the 4 weeks preceding the urine culture. Three-hundred and twenty (57.4%) had blood culture, featuring 93 (29.0%) with positive blood culture for the same *S.aureus*. For these 93 patients, an echocardiography was performed in 67 cases (72%). In these last population, 12 patients were diagnosed with definite infectious endocarditis, and 14 with a possible infectious endocarditis. None of the twelve first patients had a recent urologic procedure. C-reactive protein blood concentration was higher in patients with positive vs negative blood culture (170.3 vs 93.9 mg/L, p<0.001) and in patients with definite/possible endocarditis vs no definite/possible

endocarditis after echocardiography (222.1 vs 152.2 mg/L, $p=0.034$), but no significant difference was observed with age, creatininemia, leucocyte urinary count or *S. aureus* urinary count.

If assuming that the patients with blood culture (either positive or negative) were not different from the patients who had not, and that the patients with positive blood culture who received an echocardiography were not different than the ones who did not, 26 endocarditis cases may have been underdiagnosed in our population.

Conclusions: Among the patients with *S.aureus* bacteriuria, bacteremia is detected in 29% of patients who had blood culture, and diagnosis of definite/probable infective endocarditis is made in 38.8% of cases if sought. A haematogenic mechanism is therefore frequent ; blood cultures and (if positive) echocardiography should be systematically performed in case of *S. aureus* bacteriuria.