P-47 (Early career physician)

The predictors of invasive Staphylococcus aureus infection in the patients presenting Staphylococcus aureus bacteriuria at first contact in ER.

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Introduction:
We rarely consider gram-positive coccus organism found by gram-stain as a true organism causing urinary tract infection. However, it is reported that invasive Staphylococcus aureus infection (ISI) can result in hematogenous seeding of urinary tract. Therefore, when we suspect the Staphylococcus aureus bacteriuria (SABU) by gram-stain at emergency department, it is reasonable to evaluate these patients for ISI. So, we aimed to reveal the predictors of ISI in the SABU patients at emergency department setting.

Methods:
We conducted a retrospective medical record review of the SABU patients in emergency department from December 2013 to November 2018. SABU was defined as containing > 10*3 colonies of Staphylococcus aureus and ISI was defined by the presence of Staphylococcus aureus bacteremia and clinical judgement. Clinical and laboratory parameters were compared between the SABU patients with and without ISI. For statistical analysis, we used the Mann-Whitney U nonparametric test for the quantitative variables, and the Chi-square test for the category variables.

Results:
A total of 36 SABU patients were included. 7 patients (19%) were with ISI and 29 patients (81%) were without ISI. Statistical analysis indicated that the presence of back pain (43% vs 10%, P=0.038) and single organism in urine culture were significantly associated with ISI compared with polymicrobial organism (86% vs 28%, P=0.005). Two laboratory parameters were statistically different; white blood cell count (WBC) and C-reactive protein (CRP) level. The median(range) of WBC and CRP in with-ISI and without-ISI group were 14,710 /μL (12,470~32,160 /μL) vs 9,910/μL (2770~23730/μL), and 24.74 mg/dL (3.1~49.87 mg/dL) vs 3.43 mg/dL (0.02~45.54 mg/dL), respectively.

Conclusion:
We investigated the predictors of ISI in SABU patients at emergency department setting. Back pain, single organism in urine culture, high elevated WBC and CRP were more observed in the SABU with ISI.