

Session: EP192 Urinary tract infections: current issues

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Applying new clinical criteria for sepsis to hospitalized patients with urinary tract infections (UTI)

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Background: The new clinical criteria for sepsis (Sepsis3) were recently introduced to better discriminate those needing management of infection. The purpose of this study was to assess whether the new criteria is more sensitive in identifying patients presenting to the hospital with a UTI needing more aggressive management of antibiotics and the effect on outcomes.

Material/methods: This was a prospective observational study of hospitalized patients with *E coli* or *Klebsiella* spp UTI between 1/2015-2/2016. Adult patients with community-onset UTIs were included if they had symptoms of UTI, pyuria, and received ≥ 48 h of antibiotics. Patients were grouped by new (sepsis3) and old sepsis criteria (SIRS + infection) and compared for clinical presentation and correlation to outcomes.

Results: 240 patients met inclusion criteria, mean age was 54yo, 34% were male, and 69% were Hispanic. 65% had previous history of UTI, with 33% meeting definition for recurrent UTI. 155 patients (65%) met criteria per old sepsis criteria (S), of which 40 met criteria for severe sepsis and 9 for septic shock. 56 (23%) met sepsis3 criteria (S3); 173 patients were evaluated by qSOFA criteria and 67 patients by SOFA criteria. 10 patients that met S3 criteria did not meet old criteria. One third of patients (36%) in both sepsis groups had fever upon admission. Pyelonephritis was more frequent in the S group (45% vs 30%, $p=0.08$) and 30% in both groups had concurrent bacteremia secondary to UTI. 40% had ESBL producing organisms identified in urine culture. ID consultation occurred in 10% of patients regardless of meeting sepsis criteria. S3 group had higher Charleston comorbidity index score (4 vs 3, $p=0.06$) and higher APACHE II scores (16 vs 12, $p<0.0001$). 66 patients needed ICU

admission, which S criteria captured more of (72% vs 63%). S group also captured all patients with vasopressor use during UTI episode, while 4 patients (2%) that required vasopressor did not meet sepsis3 criteria. Initiation of empiric therapy on day of admission was similar whether patients met sepsis criteria or not with both definitions (S3 60% vs S 50%, $p=0.3$). Clinical outcomes were similar between the groups, with early clinical response (S 82% vs S3 71%, $p=0.1$), 30d mortality (S 2% vs S3 4%, $p=0.6$), and LOS (S 4d vs S3 4.5d, $p=0.7$).

Conclusions: Among patients hospitalized with UTI, S3 criteria captured significantly fewer patients meeting sepsis criteria than the old criteria. S3 criteria did not identify those needing ICU care or vasopressor therapy better than the old criteria in those presenting with a UTI. Using the new criteria to guide identification of those who need early aggressive management should be used with caution in UTI and close attention to other clinical parameters will be important.