Comparison of Clinical Characteristics between Diabetic and Non-diabetic Women with Community-Acquired Acute Pyelonephritis in Korea: Multicenter Study

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Background: The objective of our study was to compare the clinical features and treatment outcome between the diabetic and non-diabetic women with community-acquired APN (CA-APN).

Methods: We performed prospective observational study, which collected clinical and microbiological data of CA-APN women with identified urinary pathogen from urine or blood cultures who visited 11 university hospitals from March 2010 to February 2012.

Results: A total of 775 women with CA-APN were enrolled. The number of diabetic patients was 246 (31.7%). In clinical characteristics, more patients in diabetic group had a history of admission within 1 year (36.4% vs. 22.2%, \( p<0.001 \)) and co-morbidities like as cerebrovascular disorder (17.1% vs. 6.8% \( p<0.001 \)), congestive heart failure (11.4% vs. 5.1% \( p=0.002 \)), dementia (5.7% vs. 2.5% \( p=0.022 \)), chronic renal disease (12.7% vs. 3.8% \( p<0.001 \)) and neurogenic bladder (2.0% vs. 0.4% \( p=0.023 \)). In terms of the clinical features, flank pain (27.6% vs. 37.2% \( p=0.009 \)), lower UTI infection symptoms (57.3% vs. 69.6% \( p=0.001 \)) and CVA tenderness (54.9% vs. 72.2% \( p<0.001 \)) were less commonly observed in diabetic patients. In laboratory findings, more diabetic APN patients showed C-reactive protein ≥ 20 mg/dL (40.7% vs. 27.4% \( p<0.001 \)), azotemia (29.3% vs. 13.4% \( p<0.001 \)) and bacteremia (53.7% vs. 38.2% \( p<0.001 \)). Final clinical failure rate or the mortality was not different between two groups. However, the duration of hospitalization was significantly longer (median 9.0 days vs. 7.0 days, \( p<0.001 \)), and microbiologic failure was more frequent in diabetic group than in non-diabetic group (15.8% vs. 8.0%, \( p=0.020 \)). Multivariate logistic regression analysis identified diabetes mellitus as a significant related factor of longer hospitalization (OR 1.749, CI 1.134-2.698, \( p=0.011 \)) in addition to several other factors.

Conclusions: CA-APN women with diabetes showed less clinical symptoms/signs but severer laboratory findings, and resulted in similar treatment outcome but longer hospitalization.