Changing Spectrum of Infections in Childhood Nephrotic Syndrome

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To the Editor: Nephrotic syndrome (NS) is a common childhood glomerular disease. Infections are an important cause of morbidity and mortality, with bacterial infection of upto 21.2% [1]. Studies show different infections occur at different time periods [2, 3]. Knowledge of existing infection spectrum and common organisms in a particular region is important for deciding antibiotic policies.

We performed a cross-sectional study enrolling all children with NS (as defined by KDIGO [4]) admitted with infection in Pediatric Nephrology ward, Advanced Pediatrics Centre, PGIMER, Chandigarh, India from January 2017 through June 2018. The study was approved by the Institute Ethics Committee.

Two hundred forty six children with NS were admitted and 124 patients (50%) with 126 episodes had infection. Of these patients, 85 (68.5%) were boys and 39 (31.45%) were girls. The mean age of onset of NS was 3.42 (± 2.31) y; mean age at which they presented to our center was 4.1 (± 2.53) y and mean age they presented with infection was 5.35 (± 3.48) y. Almost 25% ($n = 31$) were having their first episode of NS. Out of those who had been previously treated, 59% ($n = 73$) were steroid sensitive and 16.1% ($n = 20$) were steroid resistant. 13.7% ($n = 17$) had prior infective complications, out of which 15 had spontaneous bacterial peritonitis (SBP).

One hundred ten patients (88.7%) with 112 episodes had SBP. However, only 12 (10%) episodes had classical symptom combination of fever, abdominal pain, vomiting and loose stools. In those having peritonitis, Gram negative bacilli was detected in 14% ($n = 14$) and Gram positive cocci in 8.1% ($n = 9$), with a detection rate of 24% in ascitic fluid. We could isolate organisms in 9.8% ($n = 11$), 8 of which were Gram positive and 3 were Gram negative organisms. Besides usual organisms, *Leclercia adecarboxylata*, a Gram negative bacilli was grown and it was sensitive to cephalosporins. A small proportion had cellulitis ($n = 6$), pneumonia ($n = 5$), urinary tract infection (UTI: $n = 2$), tuberculosis (TB: $n = 2$), varicella ($n = 2$), meningitis ($n = 1$) and septicemia ($n = 1$). A significant ($n = 4$; 3.3%) had multiple infections, which was considered as a single infection episode.

Thus, in our setting, infection is the most common cause of hospitalization in NS children, almost all being peritonitis. Though Gram positive bacteria predominates, yet the rise of Gram negative organisms cannot be undermined.

Compliance with Ethical Standards

Conflict of Interest None.

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