

HYPOGLYCEMIA ASSOCIATED WITH PNEUMOCOCCAL BACTEREMIA

I-Shiow Jan¹, Tzu-Hsiu Tsai², Hsin-Fang Hsu², Po-Ren Hsueh¹, Li-Na Lee¹ Department of Laboratory Medicine¹ and Internal Medicine², National Taiwan University Hospital

BACKGROUND: Hypoglycemia has been associated with severe infection in rare instances, except in malaria. The first three cases of bacteremia associated hypoglycemia were reported in children with meningococemia. In subsequent few case reports, hypoglycemia has been associated with sepsis caused by encapsulated bacteria, and has been an index of grave outcome. The reported cases were young children, or adults who were splenectomized, alcoholic, or on chronic dialysis. We reported six patients (three children and three adults) with pneumococcal bacteremia and hypoglycemia. None of the adults were splenectomized, alcoholic or on dialysis.

METHODS: We searched the database of our microbiology laboratory and retrieved records of all patients with *S. pneumoniae* bacteremia in 2004 and 2005. Hypoglycemia was defined as plasma glucose < 72 mg/dL.

RESULTS: We found 70 episodes (69 patients) of pneumococcal bacteremia (Table 1). Hypoglycemia was documented in six (8.6%) patients. They occurred in three children and three adults (Table 2). None of the patients identified were diabetics or on dialysis. Their glucose level ranged from 6 to 67 mg/dL (Table 2). The hypoglycemic child with asplenism and cyanotic heart disease died, while among the children without hypoglycemia only one died (mortality 33.3% vs 5.6%, $p=0.650$). All three adults with hypoglycemia died, compared with 11 in those without hypoglycemia (100 vs. 23.9%, $p=0.03$). Those whose glucose levels fell below 30 mg/dL died rapidly (within 28 hours after arrival). All six episodes occurred in cooler seasons (October to March). Serogroup analysis showed 5 different serogroups (Table 3). All except one isolate were resistant to penicillin.

CONCLUSION: Hypoglycemia occurred in 8.6% of pneumococcal bacteremia cases, and is an index of grave outcome in adults. Patients whose glucose levels fell below 30 mg/dL had a fulminant course.

Keyword: hypoglycemia, pneumococcal bacteremia