

Diarrhea-associated Hemolytic Uremic Syndrome (D+ HUS) in 2003 in Korea

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Objective : D+ HUS is characterized by hemolytic anemia, acute renal failure and thrombocytopenia following an infection of enterohemorrhagic Escherichia coli (EHEC). The Korean Society of Pediatric Nephrology (KSPN) and Korea Center for Disease Control and prevention (KCDC) had constructed a national surveillance system for D+ HUS in early 2003. And a small outbreak was detected in 2003 by the surveillance system. We analyzed the epidemiological and clinical features of the outbreak.

Methods : Total 39 hospitals covering whole country except Jeju island participated, and all the children with clinical diagnosis of D+ HUS from Mar. to Dec. 2003 were registered.

Results : Total 30 children with D+ HUS were registered. The male and female ratio was 14:16, and 26 of them were less than 5 years old. Nineteen cases resided in Seoul and Kyunggi-Do area, and 25 cases were clustered during late May to early July. Multiple cases were detected in a center for crippled children (3 cases), a nursery school (2 cases) and a junior high school (3 cases), but not in any families. The stool culture grew EHEC in 7 cases, and the serotype was O104 in 3, O121 in 2, O119 in 1, and O26 in 1. The stool PCR for verotoxin was positive in 10 cases. However, EHEC was not detected from any foods suspected to be the source of infection. The clinical features were as follows; pallor 67%, preceding bloody diarrhea 63% abdominal pain 60%, vomiting 40%, petechiae 33%, fever 23%, hepatomegaly 17%, and seizure 13%. Anuria was accompanied in 10 cases for 1 to 12 days, and dialysis was performed in 8. Fresh frozen plasma was given in 7 cases, and parenteral or oral antibiotics in 13 cases for 2 to 30 days. Three patients (Group 1) died during the acute stage, and 15 (Group 2) had persistent mild proteinuria, hematuria and/or hypertension after recovery. Eleven cases (Group 3) recovered fully without any sequelae. All the clinical and laboratory data were compared among 3 groups, and the degree of thrombocytopenia, hyperuricemia, and azotemia showed significant differences between Group 2 and 3 (p<0.05).

Conclusion : We experienced an outbreak of D+ HUS in 2003. Although the scale of the outbreak was not big, it was the first one detected in our country. Considering the gradually increasing incidence of D+ HUS during these several years, D+ HUS may be one of the major health problems in Korea in near future. The nationwide surveillance system should be essential for the control of D+ HUS.