Familial Epidemic of Meningococcal Disease

Two closely related boys from the same household (Home 1), aged two and three, were affected with fulminant meningococcal sepsis known as Waterhouse-Friderichsen syndrome. Neisseria meningitidis serogroup B was isolated from their blood and cerebrospinal fluid. The two-year-old boy died one day after the onset of the disease. Epidemiological examination of contacts and pharyngeal swabs were performed in 14 persons from the household, all of them relatives of the affected children, as well as in a number of other contacts. Chemoprophylaxis with cotrimoxazole was simultaneously administered to all contacts. Family histories revealed that two contacts from the household where the patients did not live (Home 2) were inadvertently omitted. Subsequent examinations, following a report of another contagious disease (salmonelosis), revealed that these two persons were Neisseria meningitidis carriers, together with another one in the same household. The carriers most probably caused the infection of a third, five-year-old boy, the deceased boy’s brother (Home 1) who also developed fulminant meningococcal sepsis. The failure to take the appropriate prophylaxis led to a prolonged carrier state in the carrier from the second household. Repeated pharyngeal swab sampling revealed two more carriers from both households that had previously been negative. Control of the epidemic was achieved after 5 weeks by repeated and controlled chemoprophylaxis with ciprofloxacin, and by repeated epidemiological examinations, disinfection, and daily health surveillance by the Sanitary Inspectorate. This extremely rare instance of a familial epidemic with three infected persons emphasizes the need for consistent chemoprophylaxis in meningococcal disease contacts.

Key words: carrier state; chemoprophylaxis; epidemic; Neisseria meningitidis; Waterhouse-Friderichsen syndrome

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