【別紙２】

論文名：

Intrafamilial Transmission of Parechovirus A and Enteroviruses in Neonates and Young Infants.

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Background: Parechovirus A (PeV-A) is an important cause of sepsis and meningoencephalitis in neonates and young infants. Thus, identifying the source of PeV-A is essential for prevention; however, little is known regarding the spread of PeV-A among family members of PeV-A-infected neonates and young infants.

Methods: In this prospective study, we evaluated stool samples from family members of PeV-A-infected neonates and infants younger than 4 months who presented with sepsis, meningoencephalitis, or both in Niigata, Japan, in 2016. Because of a simultaneous outbreak, enteroviruses (EVs) were also evaluated during this period. Real-time polymerase chain reaction followed by sequence analysis was used for viral diagnosis using serum and/or cerebrospinal fluid samples.

Results: Among 54 febrile patients, the stool samples of 14 (26%) and 12 (22%) patients tested positive for PeV-A and EV, respectively. Stool samples from 54 family members (38 adults and 16 children) of 12 PeV-A-infected patients were available. The rate of PeV-A positivity in these samples was higher among the children (88% [14 of 16]) than the adults (34% [13 of 38]). Among family members with a PeV-A-positive stool sample, 29% (4 of 14) of the children and 77% (10 of 13) of the adults were asymptomatic. Similarly, among 53 stool samples from family members (31 adults and 22 children) of 11 EV-infected patients, the rate of EV positivity in the stool samples was higher among the children (91% [20 of 22]) than among the adults (42% [13 of 31]). The asymptomatic-patient rates were 45% (9 of 20) among the children and 85% (11 of 13) among the adults in family members with EV-positive stool.

Conclusions: Similar to EVs, PeV-A was detected frequently in stool samples from family members of PeV-A-infected patients. Among family members with PeV-A-positive stool, adults were more likely than children to be asymptomatic and therefore could be an important source of PeV-A infection.