

Current Situation on Norovirus Infections and Web-Based Monitoring System 'K-CaliciNet' for Networking with Regional Laboratories

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Noroviruses are major microbial agents of acute gastroenteritis and make big concerns on public health by high incidence of norovirus related foodborne outbreak.

The Korea Centers for Disease Control and Prevention (KCDC) performed K-EnterNet as a laboratory surveillance for monitoring prevalence of enteropathogenic microorganisms including bacteria, viruses and protozoa in patient with acute gastroenteritis and managed K-CaliciNet as a laboratory network to fortify regional laboratory activities by supporting infrastructure and web-based report of molecular epidemiology for tracing relevance among outbreaks.

We screened semi-nested RT PCR for the detection of genome of norovirus in patients with gastrointestinal symptoms in both sporadic cases and epidemic cases and performed sequence analysis via web based reporting system.

During recent 5 years, the incidence of norovirus infections in non bacterial gastroenteritis had increased up to approximately 12.0% annually and 31.1% in peak season in 2008. Since 2006, number of norovirus related outbreak was also increasing about 5 times higher than annual average until 2005. In 2008, 65 cases (25%) were identified norovirus related epidemics among 255 cases which can be determined causative agents.

By genoepidemiologic investigation based on 5' end of ORF2 via K-CaliciNet, 28 genotypes of norovirus were circulating in Korea from 2005 to 2008. Among genotypes, the most prevalent genotype GII_4 (54.2%) was most common, followed by GII_3 (30.3%), GII_1 (4.2%), and GII_12(3.1%). Prevalence of GI type of norovirus infections in epidemics was about 3 times higher than that in sporadic cases, which suggested that certain GI types of norovirus have different preferences of infection compared than other genotypes.

Conclusively, we can assume that norovirus infections are prevailing in Korean population and high incidence of norovirus infections can make high possibility to occur frequent episodes of norovirus related outbreak via environmental circulation.

References

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