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P0073 Rotavirus detection. Is an immunochromatographic assay sensitive enough?

Jose A Boga[1], Susana Rojo[1], Zulema Perez-Martinez[1], Miriam Gomez-Novo*[1], Isabel Costales[1], Luz Maria Mendez[1], Maria Jose Menendez[1]

[1]Hospital Universitario Central de Asturias, Service of Microbiology, Spain

Background: Rotavirus is a common cause of cases gastroenteritis worldwide. Considering short duration of symptoms, rapid methods of diagnostic are required for a correct management of rotavirus infection. So, the sensitivity of an easy–to-use and rapid commercial immunocromatographic assay (ICA) is evaluated.

Materials/methods: Between July and October 2016, a total of 185 stool samples from 185 patients [mean age: 21.8 ± 27.8 years; range: 1 month - 92 years with clinical symptoms of gastroenteritis were collected. A real time PCR (RT-PCR) assay, using “TaqMan® Fast Virus 1-Step Master Mix” (ABI) and primers and a FAM-labeled probe, was carried out to detect and quantify rotavirus genome in previously extracted stool samples by MagNa Pure LC 2.0 system. Viral load was expressed as log10 copies/ml. All samples were also tested by using the ICA “Simple Rota-Noro” (Operon, Spain) according to manufacturer’s instructions.

Results: Twenty four (13.0%) samples were found positives for Rotavirus for at least one of the two techniques. Of them, 18 were positive by RT PCR, 4 were positive by both methods and 2 were positive by ICA. The viral load mean of the 22 RT-PCR positive samples was 4.6 ± 1.5 log10 copies/ml (range: 2.8-7.6 log10 copies/ml). The viral load of the 4 samples positive by both methods was significantly higher than the viral load of the 18 samples positive only by RT-PCR (6.9 ± 0.8 vs. 4.0 ± 1.0; ranges: 5.8-7.6 vs. 2.8-7.0, respectively) ($p<0.001$). The ICA was not so sensitive to detect samples with viral load lower than 5 log10 copies/ml.

Conclusions: Although the ICAs are easy and rapid methods, its low limit of detection support the need of using techniques based on genome amplification to detect rotavirus in stool samples with low viral load.