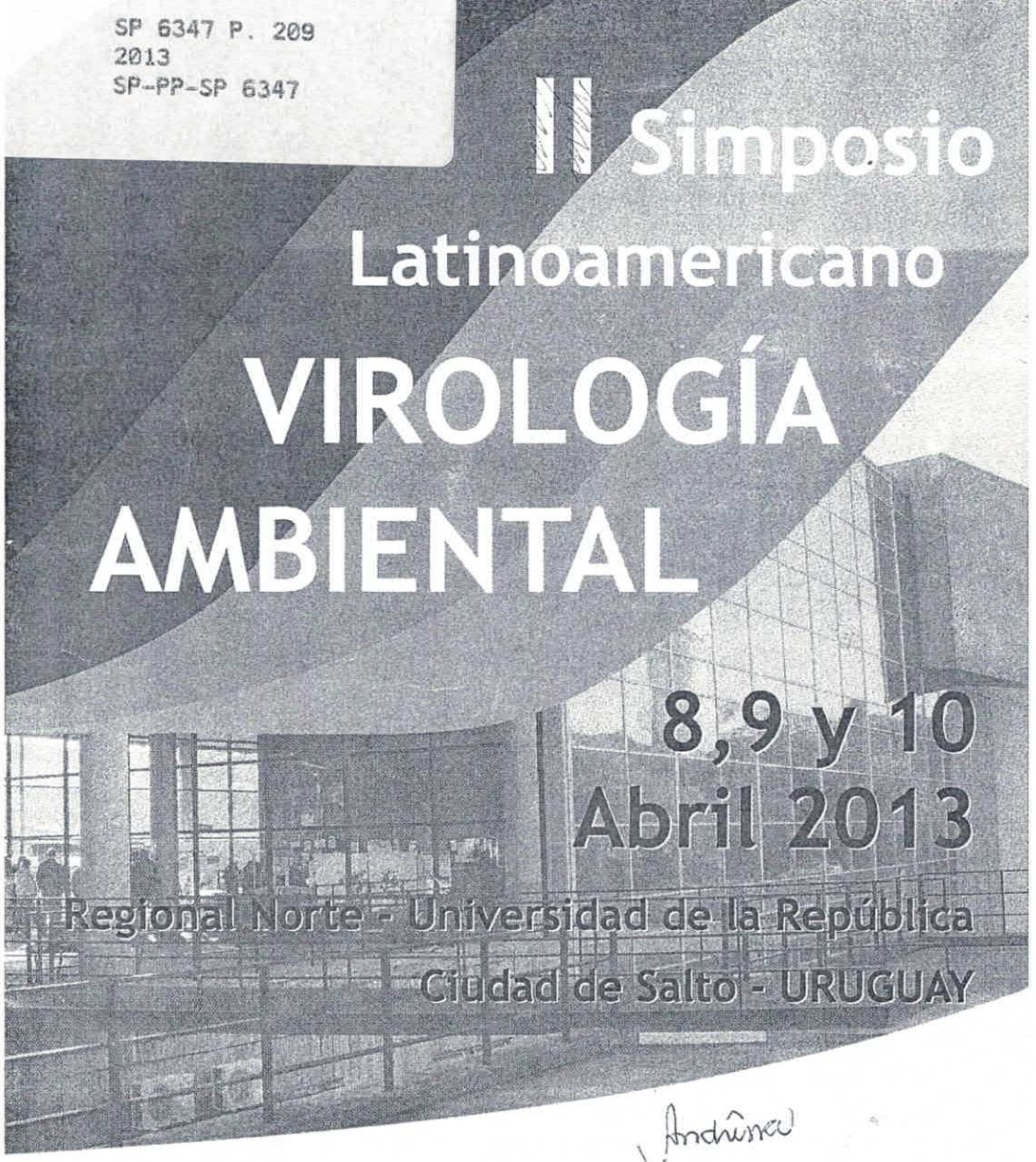

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CENTROMEDICOSALTO

Salto

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ENVIRONMENTAL SURVEILLANCE OF ROTAVIRUS IN DRAINAGE BASIN OF JUIZ DE FORA, MG AND ITS RELATION WITH THE MICROBIOLOGICAL AND PHYSICO-CHEMICAL PARAMETERS.

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The enteric viruses are present in aquatic environments due to contamination by sewage effluents, even in the absence of fecal coliforms, which are the indicators of choice when it comes to microbial water quality assessment. These viruses are frequently associated to waterborne viral gastroenteritis being the group A rotaviruses (GARV) a leading agent of these diseases, especially in developing countries. The present study aimed to investigate the presence of GARV in surface waters of the Bacia Hidrográfica do Córrego de São Pedro (BHCSP), in Juiz de Fora city, Minas Gerais state, correlating with microbiological and physico-chemical parameters for water quality. From July 2011 to May 2012, 2L of surface water were collected at 8 sites along the basin, in six campaigns, totalizing 48 samples. Putative present viral particles were concentrated by adsorption-elution in negatively charged membrane, followed of RNA extraction by silica method. The search of GARV was carried out using RT-PCR and real time PCR. Fecal coliforms were quantified and physico-chemical parameters (conductivity, chlorine, pH, salinity, temperature and turbidity) were determined in each site in all campaigns. The presence of genetic material of GARV was detected by PCR in 29.2% (14/48) of the samples however this number increased to 62.5% (30/48) when using the real time PCR. Bacteriological analyses showed that in 54,2% (26/48) of analyzed water samples exceeded the values established by the CONAMA N° 357/05 for class 1 and 2 freshwater. GARV were detected in 50.0% (11/22) of the water samples considered into the values acceptable of the microbiological quality. Statistical analyzes showed significant correlation between GARV detection and turbidity (p=0,000) and no correlation with others parameters. The data of this study point to the need the establishment of viral parameters for the assessment of water quality.

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