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Study on the Presence of Protozoal Coinfections among Patients with Pneumocystis jirovecii Pneumonia in Bulgaria

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Abstract : The Pneumocystis jirovecii (P. jirovecii) and protozoan of the genera Acanthamoeba, Cryptosporidium, and Toxoplasma gondii are opportunistic pathogens that can cause life-threatening infections in immunocompromised patients. Aim of the study was to evaluate the coinfection rate with opportunistic protozoal agents among Bulgarian patients diagnosed with P. jirovecii pneumonia. Thirty-eight pulmonary samples were collected from 38 patients (28 HIV-infected) with P. jirovecii infection. P. jirovecii DNA was detected by real-time PCR targeting the large mitochondrial subunit ribosomal RNA gene. Acanthamoeba was determined by genus-specific conventional PCR assay. Real-time PCR for the detection of a Toxoplasma gondii and Cryptosporidium DNA fragment was used. Pneumocystis DNA was detected in all 38 specimens; 28 (73.7%) were from HIV-infected patients. Three (10,7%) of them were co-infected with T. gondii and 1 (3.6%) with Cryptosporidium. In the group of non-HIV-infected (n=10), Cryptosporidium DNA was detected in an infant (10%). Acanthamoeba DNA was not found in the tested samples. The current study showed a relatively low rate of coinfections of Cryptosporidium spp./T. gondii and P. jirovecii in the Bulgarian patients studied.

Keywords : coinfection, opportunistic protozoal agents, Pneumocystis jirovecii, pulmonary infections
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