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COMPARISON OF MOLECULAR AND MICROSCOPY METHODS FOR IDENTIFICATION OF PNEUMOCYSTIS IN BRONCHOALVEOLAR LAVAGE SAMPLES IN ICU HOSPITALIZED PATIENTS

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Abstract
Pneumonia caused by Pneumocystis is the most common opportunistic infection in HIV-positive patients. Organ recipients and patients with brain trauma are prone to this microorganism. Moreover invasive methods such as intubation or tracheotomy can facilitate the infection.In this study, 100 Bronchoalveolar Lavage (BAL) samples were collected from hospitalized patient in surgery and neurosurgery ICU from Ardabil Fatemi hospital. The samples were transferred to molecular and cellular laboratory of Ardabil Medicine Faculty. For identification of pneumocystis, the samples were homogenized and centrifuged. Smears were prepared from pellets and stained by both Giemsa and GMS methods. Also DNA was extracted from the pellets and Nested-PCR was performed for amplification of mtLSU rRNA gene. Electrophoresis of PCR product was done for observation of the 260 bp band.In our study, 31 out of 100 samples (31%) were positive in microscopic examination, whereas 78 out of 100 samples (78%) showed 260 bp band by Nested-PCR.Considering the results of this study, molecular method has high sensitivity for detection of Pneumocystis infection in comparison with microscopic methods. Hence, use of molecular methods can be recommended for identification and preventive treatment of infection in immunocompromised patients and other high risk individuals, especially in ICU.

Key words: *Pneumocystis, Nested-PCR, Bronchoalveolar lavage, Iran*