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Frequency of Protozoa and Fungi in the Bronchoalveolar Lavage (BAL) Specimens at the Bronchoscopy Section in the Hospitals of Iran

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The increasing application of confounding technology in medicine and the use of new methods of treatment have led to the emergence of a growing number of patients susceptible to dangerous and invasive infections. Immunocompromised people are prone to a variety of opportunistic infections including by bacteria, fungi, parasites and viruses. Lungs are among the most important organs involved in opportunistic infections. Fast and accurate detection of lung infections is essential. Therefore, we decided to design a study to investigate the prevalence and abundance of protozoan and fungi in the bronchoscopy and bronchoalveolar lavage (BAL) samples from the patients undergoing medical bronchoscopy using medical indication. This descriptive epidemiological study was conducted in Shohaday Ashayer and Rahimi hospitals in Khoram Abad, from August 2013 to August 2014. The patients were selected from the people undergoing bronchoscopy, and the bronchoscopy BAL samples were prepared by the physician. Laboratory investigations included direct smear and culture to examine fungi and direct observation to examine protozoan. Demographic and clinical data were collected from the patients and analyzed by the SPSS. Fifty patients underwent bronchoscopy and the BAL samples were prepared. The mean age of the patients was 60.1±18.6 years. Positive smears were observed in 19 patients (38.0%) and 16 patients (32%) had abnormal pathology consistent with fungal infection. The most common fungal agent in smear specimens was *Candida albicans* (31.3%), *Giardia* spp. positive smears were also observed in 4 patients. Analysis of the clinical status of patients, along with laboratory diagnosis, is essential. Also, in order to determine the status of some fungal diseases, the cooperation of mycologists and physicians who are responsible for the patient's clinical care is required.

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Detection of antigens leading protective immunity against *Campylobacter jejuni* and investigation of potential application area

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Campylobacter jejuni, colonizes especially on the gastrointestinal tract of the poultry and leads economic losses. Transmission to human occurs by consumption of infected poultry products and cause gastrointestinal symptoms. Colonization in poultry increase in relation with the age. Non-colonization occurs in the first 2-5 weeks so there may be the role of maternal IgY for protective immunity in eggs. Therefore antigens inducing protective immune responses may be used in vaccine studies and serologic diagnostic kits for human and poultry. Determining the reactivity of anti-*C. jejuni* IgY in local chicken eggs with membrane antigens was aimed. Membrane proteins of *C. jejuni* isolated from tissue samples of I, III and V weeks old chicks-chickens treated in the slaughterhouse of regional industrial type enterprises were extracted. After separation by SDS-PAGE, immobilized to nitrocellulose membranes. IgY were extracted from 100 eggs taken randomly from domestic and industrial enterprises. Proteins reacting with IgY were investigated by immunoblotting. Colonization in 17.5% of tissue samples was observed. Proteins from 8-120kDa on cell membranes were showed. IgY in 68% of the egg was determined by SDS-PAGE and ELISA. Reactive IgY with major 36 and 60 kDa proteins (93.3-100%) in 30 (44.1%) of egg extracts were detected. Anti-*C. jejuni* IgY was determined in 14% and 46% respectively in eggs obtained from the industrial and domestic enterprises and identified immune reactive with 36 and 60 kDa proteins. Therefore these antigens, can be use as target antigens for the vaccine and diagnostic kit development.

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