

Title: HYBRIDIZATION USING FLUORESCENT IN SITU FOR DETECTION *Pneumocystis jirovecii*.

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Summary:

The pneumocystis is an infection with a high risk of death in immunocompromised patients, particularly those with HIV / AIDS. This disease is caused by the fungus *Pneumocystis jirovecii*, an ascomycete which has affinity for the lung airways. It adheres to the wall of pneumocytes developing an infection. This organism is characterized by not to be possible to cultivate and its diagnosis is mainly based on histopathological techniques, clinical and radiological images. This paper objective is a retrospective, cross-sectional, descriptive assessment Fluorescent in situ Hybridization (FISH) for detection and identification of the fungus *Pneumocystis jirovecii* in paraffin blocks of samples containing lung fragments of necropsy patients in Medical Foundation Tropical-Doctor Heitor Vieira Dourado (FMT-HVD). The samples from paraffin blocks containing lung fragments were a total of 30 patients, where 13 of them had PCP as cause of death and other 17 had different pulmonary complications leading them to the death. Moreover, this study is important to compare the results obtained by FISH technique to those obtained by histopathological method using the Grocott staining procedure. This technique showed the presence of *P. jirovecii* in samples from patients who had PCP as a cause of death (n = 13) with 100% of compatibility when compared to the results obtained by FISH analysis. On the other hand, the pneumocystosis negative samples, where death was from other pulmonary complications (n = 17), showed a discrepancy of results obtained by different techniques. FISH method could detect the presence of *P. jirovecii* in approximately 59% of the samples (10 samples). This is justified by the fact that the patients often are affected by multiple infections, without a specific investigation of all the present host. The FISH technique showed good results when used to paraffin materials, but it is necessary future studies using the technique in samples such as nsputum and broncho alveolar lavage, in order to validate this new tool to reach a fast and specific diagnosis to pneumocystosis.

Keywords: FISH, detection, *Pneumocystis jirovecii*.

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