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**Pulmonary fungal infection in Sudan, a retrospective study from the Myology Reference Laboratory**

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**Objective:** Pulmonary fungal infections are life-threatening diseases, if not diagnosed and properly treated can lead to serious complications. In chronic cases, the condition might mimic tuberculosis and may be misdiagnosed. The aim of this retrospective study is to determine the frequency of fungi among the respiratory samples received at the myology reference laboratory over 5 years period and to provide a view of the burden of pulmonary fungal disease in the country.

**Methods:** A total of 7,173 samples were collected from the Myology Reference Laboratory, Khartoum, Sudan, between 2015-2019 were analyzed. These samples were collected from different health care centres in Khartoum state. For every sample, direct microscopy using 20% KOH and methylene blue stain was performed. In addition, cultures were made by inoculating every sample into three tubes of brain heart dextrose agar (BHI) containing chloramphenicol. Tubes were incubated at 37°C for 2 and up to 7 days. Isolated fungi were identified phenotypically using the Atlas of Clinical Fungi guidelines.

**Results:** One of the 7,173 samples, 237 (3%) were positive for fungi, both in the direct microscopy and culture. Cultures were identified as Aspergillus species 58 (16%), while 179 (54%) were found to represent Candida species.

**Conclusion:** Our study showed a high number of fungi is associated with pulmonary conditions in Sudan. Risk factors might include post tuberculoses, Asthma, HHD, and COPD.