

A High incidence of Mucormycosis among patients with COVID-19, northeastern Iran

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Introduction

Mucormycosis or zygomycosis is a severe and fatal fungal infection caused by mucormycetes. This disease mainly affects diabetic individuals, in particular among patients with immunodeficiency. The concurrence mucormycosis with other infections such as COVID-19 can disrupt the treatment and control of the infection. In this study, mucormycosis was detected using sinus biopsy specimens among COVID-19 patients, northeastern Iran.

Methods

During an eight-month period, in a tertiary referral hospital, 71 patients (88 specimens) affected to COVID-19 with a suspicion to mucormycosis were evaluated. The sinus biopsy specimens were examined using mycological procedures and histopathology. The specimens were examined by direct wet mounts with 20% potassium hydroxide (KOH) and cultured on Sabouraud dextrose agar. The cultures were then examined and evaluated to identify.

Results

The specimens showed broad mycelium without septate (non-septate hyphae) in

direct experiments of 48 (54.5%) cases, positive culture as *Rhizopus* spp. (66.7) and *Mucor* spp. (33.3%) in 24 (27%) cases, and positive histopathology results in 41 (46.6%) cases (10 specimens without histopathology examination). Of the 71 patients, 38 (53.5%) showed mucormycosis, that 19 (27%) had *diabetes* mellitus, and 15 (21%) them died.

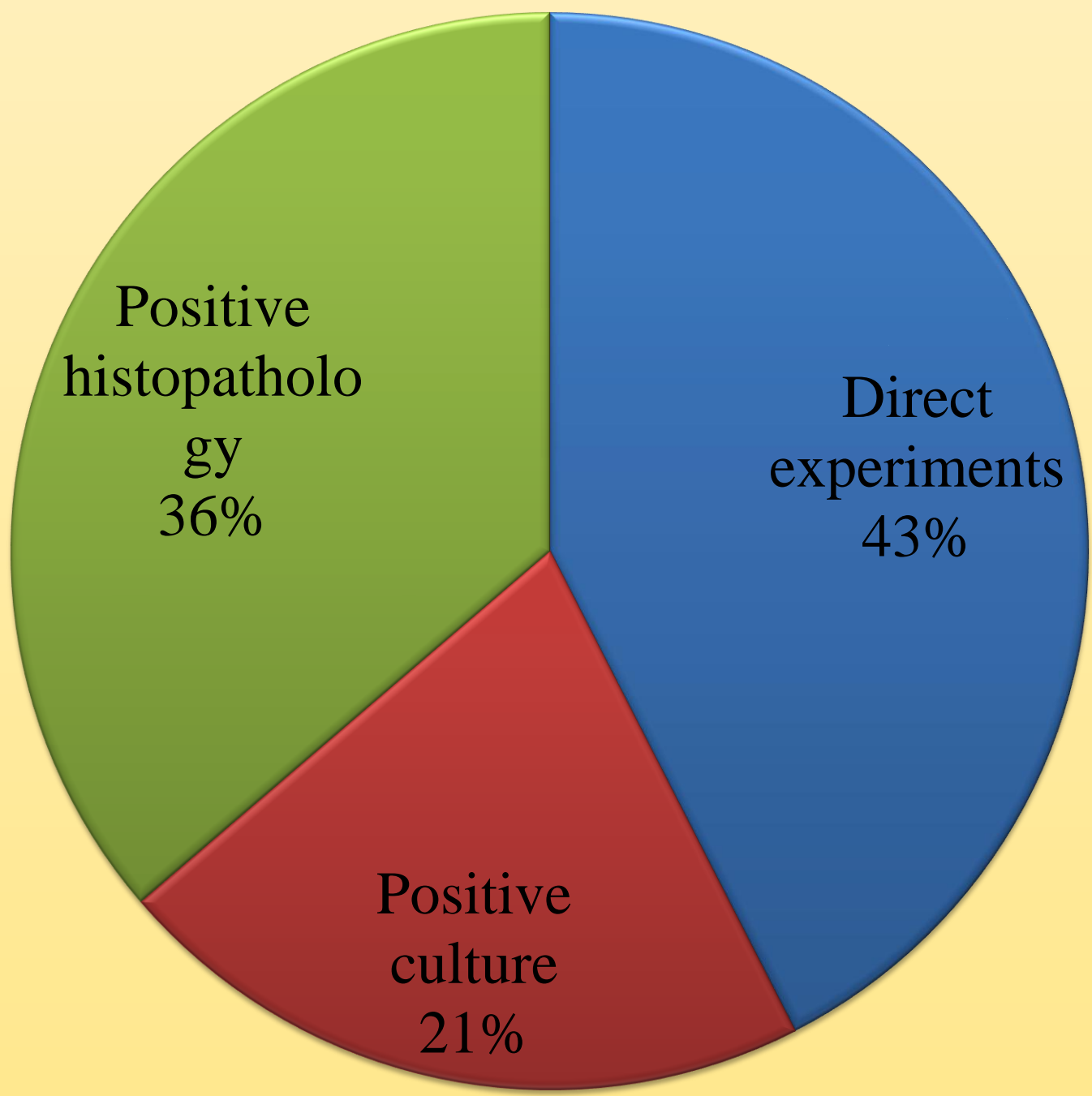


Fig. 1. Frequency of laboratory tests in COVID-19 patients

Conclusion

Mucormycosis had a high frequency among COVID-19 patients, with a relatively high

rate of *diabetes* mellitus. Mycological examination results showed a near correlation with histopathology results. Most of these patients received liposomal and deoxycholate forms of amphotericin B, but no significant difference was observed between recovery and death. A multidisciplinary approach is essential to improve the conditions facilitating the emergence of COVID-19-associated mucormycosis.

References

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