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Supplementary material

Mucormycosis in COVID-19: modifiable risk factors and its mitigation in India

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Supplementary Table 1 - Comprehending mucormycosis case reports from India and other countries.

Reference	Age	Risk factor	Comorbidities	Stage	Duration of treatment	Therapy for MM	Outcome	Comment
Mehta and Pandey 2020	60	Uncontrollable DM; steroid therapy >10 days; non-invasive ventilation	Long-standing DM (>10 years)	Severe COVID-19	10 days	Amphotericin B; cessation of steroid therapy	Dead	Within 10 days following the steroid administration, the patient developed uncontrollable DM
Garg et al. 2021	55	Steroid therapy for 14 days; hyperglycemia following steroid therapy (14 days); oxygen supplementation via venturi mask	Long-standing diabetes mellitus (>10 years); hypertension; cardiomyopathy; on hemodialysis	Severe COVID-19	21 days	Liposomal amphotericin B	Improved	Within 14 days of steroid therapy, patient had hyperglycemia
Chennamchetty et al. 2021	72	High flow oxygen therapy – nasal cannula, steroid therapy for 21 days and continued in discharge medication	Diabetes	COVID-19 pneumonia with severe ARDS	4 weeks	Liposomal amphotericin B; posaconazole 300 mg/day x 1 month	Improved	Steroid therapy for three weeks as well placement of nasal cannula for oxygen delivery is considered as a risk factor in this case
Saldanha R et al. 2021	45	Ventilated for 48 h; invasive procedure	Undiagnosed diabetes	Severe COVID-19	5.6 weeks	IV Amphotericin B	Dead	IV amphotericin therapy developed nephrotoxicity on 35 th day; Acute Respiratory Distress occurred followed by sepsis on 40 th day
Revannavar et al. 2021	NA	Uncontrolled glucose levels	Newly diagnosed DM	Mild COVID-19	COVID-19 inpatient along with MM	Amphotericin B	Resolved	Uncontrolled glucose levels itself is a triggering factor for MM
Maini et al. 2021	38	Steroid therapy for 18 days	PBS & FBS elevated after therapy	Moderate COVID-19	18 days	Debridement; amphotericin B; fluconazole	Resolved	Steroid therapy for 18 days resulted in hyperglycemia leading to MM
Saldanha M et al. 2021	32	Nothing in Line	Uncontrolled DM prior 6 months	Mild COVID-19	Admitted with the presentation of MM and incidentally turned out to be COVID-19 +ve	IV Amphotericin B; barrier draping method with three ports	Resolved	Uncontrolled DM, could be the trigger factor
Rao et al. 2021	66	Systemic steroids for the past 12 days; poorly controlled diabetes	Uncontrolled DM	nm	12 days	Functional endoscopic sinus surgery with orbital exenteration; intravenous liposomal amphotericin	Resolved	Steroid therapy has worsened DM and induced MM
Werthman-Ehrenreich 2021	33	DM	Uncontrolled DM	Severe COVID-19 with pneumonia	Incidentally, found COVID-19 with MM	Amphotericin B	Dead	The patient had developed DKA, and sepsis leading to death
Mekonnen et al. 2021	60	Poorly controlled insulin-dependent diabetes; mechanical intubation; steroid therapy for 8 days	Steroid therapy leading to hyperglycemia	Severe COVID-19 with ARDS	8 days	Surgical debridement; liposomal Amphotericin B; due to nephrotoxicity, shifted to Posaconazole	Dead	Steroid therapy leading to hyperglycemia as well as invasive ventilation can increase the risk of MM
Monte-Junior et al. 2020	86	Mechanical ventilation; steroid for 5 days	Steroid therapy; cell-mediated immunity reduced due to COVID-19	COVID-19 with ARDS	5 days	No antifungal therapy given	Dead	Steroid therapy as well, COVID-19 could be the reason for suppressed immunity
Pasero et al. 2021	66	Mechanical intubation, immunosuppression condition	Hypertension	Severe COVID-19	14 days	Liposomal Amphotericin B; surgical debridement; isavuconazole	Dead	Due to COVID-19 and mechanical invasion, the risk of MM is increased
Alekseyev et al. 2021	41	Steroid therapy; diabetic ketoacidosis	Type 1 diabetes mellitus; DKA	Severe COVID-19 with pneumonia	Both present at the same time	Surgical debridement; IV amphotericin B	Resolved	No evidence of hypoxemia, but still steroid therapy was given which resulted in uncontrolled DM
Kanwar A et al 2021	56	Severe COVID-19 with immunosuppression	End-stage renal disease on Hemodialysis	Severe COVID-19	Seven days	Empiric liposomal amphotericin B (LAmB, 5 mg/kg)	Dead	Due to Severe COVID-19 & comorbidity of renal failure the patient became hypotensive, developed cardiac arrest and died

Reference	No of cases	Risk factor	Stage	Average duration	Therapy for MM
Veisi et al. 2021	2	Steroid therapy 7-8 days	nm	7-8 days	Amphotericin B; endoscopic sinus debridement; paranasal sinus irrigated with diluted amphotericin B; posaconazole 800 mg
Sharma et al. 2021	23	Steroid therapy for COVID-19 management; mechanical ventilation	nm	14-19 days	Surgical debridement; intra-orbital amphotericin treatment
Patil et al. 2021	4	DM & HTN, post-COVID	nm	15 days	-
Nehara et al. 2021	5	Steroid therapy, DM	Mild COVID	7-28 days	Liposomal amphotericin B 5 mg/kg/day; Posaconazole; steroid tapering

MM: Mucormycosis; ARDS: Acute Respiratory Distress Syndrome; DM: Diabetes Mellitus; DKA: Diabetic Ketoacidosis; nm = not mentioned

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