SUPPLEMENTARY MATERIAL

The final PubMed search used was: Mucorales[MeSH Terms] NOT (plants[MeSH Terms] OR plant diseases[MeSH Terms])) combined, using AND term, with criteria terms including (mortality[MeSH Terms]) OR (morbidity[MeSH Terms]) OR (hospitalisation[MeSH Terms]) OR (disability[All Fields])) OR (drug resistance, fungal[MeSH Terms]) OR (prevention and control[MeSH Subheading]) OR (disease transmission, infectious[MeSH Terms]) OR (diagnostic[Title/Abstract]) OR (antifungal agents[MeSH Terms]) OR (epidemiology[MeSH Terms]) OR (surveillance [Title/Abstract]).

The final Web of Science search used was: [(TI=("Mucorales") OR AB=("Mucorales")) NOT (TS=(plant) OR TS=(wilt) OR TS=(rot) OR TS=(fruit) OR TS=(vegetable) OR TS=(crop))], combined, using AND term, with criteria terms each as topic search, including (mortality) OR (case fatality) OR (morbidity) OR (hospitali*ation) OR (disability) OR (drug resistance) OR (prevention and control) OR (disease transmission) OR (diagnostic) OR (antifungal agents) OR (epidemiology) OR (surveillance). The symbol * allows a truncation search for variations of the term (e.g. hospitalisation or hospitalization).

All searchers were limited to 1 January to 23 February 2021.

Table S1. Risk of Bias Assessment by Domain.

Author	Year	Overall risk	Domains assessed					
			Selection of participants	Confounding variables	Measurement of exposure	Blinding of outcome assessments	Incomplete outcome data	Selective outcome reporting
Alastruey-Izquierdo *et al.*[91]	2018	High	High	High	High	Unclear	High	High
Arendrup *et al.*[92]	2015	High	High	High	High	High	Unclear	Unclear
Bonifaz *et al.*[23]	2014	High	Unclear	High	Unclear	Unclear	High	Unclear
Bonifaz *et al.*[32]	2021	High	High	High	Low	Unclear	Low	Low
Bonifaz *et al.*[35]	2021	High	Unclear	High	Low	High	High	High
Caramalho *et al.*[30]	2015	High	High	High	High	High	High	High
Chakrabarti *et al.*[24]	2019	High	Unclear	High	Low	Low	Unclear	Low
Chowdhary *et al.*[29]	2014	High	High	High	High	NA	High	Unclear
Dolatabadi *et al.*[33]	2018	High	High	High	Low	NA	High	High
Espinel-Ingroff e*t al.*[49]	2015	High	Low	High	Low	Unclear	Unclear	Low
Kontoyiannis *et al.*[14]	2016	High	Low	High	High	Low	Unclear	Low
Lee *et al.*[22]	2020	High	Low	High	Low	Unclear	Unclear	Low

Legrand *et al.* [20]	2016	High	Low	High	Low	Low	Unclear	Unclear
Manesh *et al.*[21]	2019	High	Low	Low	High	Unclear	Low	Low
Marty *et al.*[36]	2016	Low	Low	Low	Low	Low	Low	Low
Millon *et al.*[34]	2016	High	Unclear	High	Unclear	Low	High	Low
Ozenci *et al.*[93]	2019	High	Low	High	Unclear	Low	High	Low
Pana *et al.*[31]	2016	High	High	Low	Low	Low	Low	Low
Patel *et al.*[26]	2020	High	High	Low	Low	Low	Unclear	Low
Pfaller *et al.*[27]	2018	High	High	High	High	High	High	Unclear
Prakash *et al.*[6]	2019	High	High	Low	Low	Low	Low	Low
Salmanton-Garcia *et al.*[25]	2020	High	High	High	Unclear	Unclear	Unclear	High
Van den Nest *et al.*[15]	2021	High	High	High	Low	Unclear	Unclear	Low
Wagner *et al.*[28]	2019	High	High	High	High	Unclear	Unclear	Low

NA: not applicable.

Table S2. Studies reporting on drug susceptibility for Mucorales.

Author	Year	Study design	Study design	Study period	Country	Level of care	Fungal pathogen (n of isolates)	Population description	Number of patients	Samples collected from (n of isolates)
Arendrup *et al*.[92]	2015	Antifungal susceptibility study	Multi-center	1998-2014	Denmark	Not stated	*Lichtheimia corymbifera*: *n* = 12 *Lichtheimia ramosa*: *n* = 5 *Mucor circinelloides*: Group 1: *n* = 5 Group 2: *n* = 9 *Rhizomucor pusillus*: *n* = 9 *Rhizopus microspores*: *n* = 26 *Rhizopus oryzae*: *n* = 6	Not stated	Not stated	Not stated
Caramalho *et al*.[30]	2015	Antifungal susceptibility study	Multi-center	2008-2014	Austria The Netherlands	Tertiary	*Mucorales*: *n* = 169	Not stated	Not stated	Not stated
Chowdhary *et al*.[29]	2014	Antifungal susceptibility study	Multi-center	2004-2013	India	Tertiary	*Mucorales* consisting of: *Rhizopus arrhizus var. delemar*: *n* = 25 *Rhizopus arrhizus var. arrhizus*: *n* = 15 *Rhizopus microspores*: *n* = 17 *Syncephalastrum racemosum*:	Not stated	71	Pulmonary *n* = 39 Rhino-cerebral *n* = 15 Cutaneous *n* =13 Disseminated *n* = 4

							n = 11 Other: *n* = 12			
Espinel-Ingroff *et al*.[49]	2015	Antifungal susceptibility study	Multi-center	Not stated	USA India Argentina Canada Mexico Spain Australia Austria The Netherlands Italy	Tertiary	*Apophysomyces variabilis*: *n* = 10 *Cunninghamella bertholletiae*: *n* = 32 *Lichtheimia corymbifera*: *n* = 136 *Mucor circinelloides*: *n* = 123 *Mucor indicus*: *n* = 10 *Mucor ramosissimus*: *n* = 19 *Rhizopus arrhizus*: *n* = 257 *Rhizomucor pusillus*: *n* = 33 *Rhizopus microspores*: *n* = 146 *Syncephalastrum racemosum*: *n* = 35	Patients with rhinocerebral, pulmonary, skin, bone, cerebral and abdominal mucormycosis	Not stated	Nose Palate Lungs
Pfaller *et al*.[27]	2018	Antifungal susceptibility surveillance study	Multi-center	2015-2016	USA Non-US countries	Not stated	n=292: *Lichtheimia* spp. *Mucor spp.* *Rhizomucor pusillus*	Not stated	Not stated	Cerebrospinal fluid Pleural fluid Peritoneal fluid Tissue

							Rhizopus spp. *Syncephalastrum* spp.			Abscess Respiratory tract Unspecified
Wagner *et al.*[28]	2019	Antifungal susceptibility study	Multi-center	Not stated	Germany The Netherlands Spain Belgium	Not stated	*Mucor circinelloides*: *n* = 14 *Mucor indicus*: *n* = 10 *Mucor irregularis:* *n* = 7 *Mucor janssenii:* *n* = 5 *Mucor lusitanicus:* *n* = 13 *Mucor velutinosus:* *n* = 7 *Rhizopus arrhizus:* *n* = 6 *Rhizopus microsporus*: *n* = 6 *Lichtheimia corymbifera*: *n* = 8 Other: *n* = 17	Not stated	Not stated	Lungs Deep tissue Feces Skin and soft tissues Gastric mucosa Muscle Peritoneal dialysis fluid Nails Naso-labial Cornea External auditory meatus Liver Blood Heart valves

USA: United States of America; US: United States.

Table S3. Impact of preventative measures on invasive fungal disease due to Mucorales.

Author	Year	Study design	Study design	Study period	Country	Level of care	Population description	Number of patients	Preventative measures	Effectiveness
Lee *et al*.[22]	2020	Retrospective cohort study	Single-center	Jan 2011-Aug 2018	South Korea	Tertiary	Adult patients with haematological diseases	27	Antifungal prophylaxis Voriconazole (*n* = 3) Posaconazole (*n* = 2) Itraconazole (*n* = 1)	Break-through infection on antifungal prophylaxis in: 6/26 (23.9%)
Chakrabarti *et al*.[24]	2019	Prospective cohort study	Multi-center	April 2016-Sept 2017	India	Tertiary	Adult patients in ICU	398	Antifungal prophylaxis (*n* = 14) (No details of drugs used)	All (14/14; 100%) developed IMI after a mean of 14.1 days
Salmanton-Garcia *et al*.[25]	2020	Retrospective review of prospectively collected cases	Multi-center	1997-2019	Multiple: Mostly from India (*n* = 30 [16.1%]), USA (*n* = 24 [12.9%]), Spain (*n* = 21 [11.3%]),	Not stated	Adults and children with mucormycosis	22	Antifungal prophylaxis (triazoles *n* = 2), echinocandin *n* = 1)	3/22 (13.6%) patients had prophylaxis and all 3 had fungal infection whilst on prophylaxis after a median: 109 (IQR: 59–9118) days

		and Germany (*n* = 19 [10.2%])

ICU: intensive care unit; IMI: invasive mold infection; USA: United Sates of America; IQR: interquartile ratio.