Contents:

Ray A et al, Burden of serious fungal infections in India, Supplementary data 1

Contents:

1. Search strategy of different fungal diseases with number of studies whose data has been extracted

S. No.	Fungal disease	Search string	No. of studies identified	No. Of studies whose detailed data has been extracted
1.	Candidemia*	(Candidemia OR candidaemia) AND (incidence OR prevalence OR burden OR frequency) AND India	175	43
2.	Candida peritonitis*	(Candidemia peritonitis) AND (incidence OR prevalence OR burden OR frequency) AND India	27	10
3.	Continuous ambulatory peritoneal dialysis related peritonitis *	(Continuous ambulatory peritoneal dialysis OR CAPD) AND (Candida peritonitis) AND (incidence OR prevalence OR burden OR frequency) AND India	7	6
4.	Esophageal candidiasis*	(Oesophageal candidiasis OR esophageal caididasis) AND (incidence OR prevalence OR burden OR frequency) AND India	50	12
5.	Recurrent candida vaginitis*	(Recurrent Candida vaginitis OR RVVC) AND (incidence OR prevalence OR burden OR frequency) AND India	7	0
6.	Invasive aspergillosis*	(Invasive aspergillosis) AND (incidence OR prevalence OR burden OR frequency) AND India	174	7
7.	Chronic pulmonary aspergillosis *	(Chronic pulmonary aspergillosis OR CPA) AND (incidence OR prevalence OR burden OR frequency) AND India	151	4
8.	Allergic broncho-pulmonary aspergillosis *	(Allergic bronchopulmonary aspergillosis OR ABPA) AND (incidence OR prevalence OR burden OR frequency) AND India	180	19
9.	Severe asthma with fungal sensitization*	(Asthma with fungal sensitization OR SAFS) AND (incidence OR prevalence OR burden OR frequency) AND India	45	3
10.	Histoplasmosis	(Histoplasma OR (Histoplasma capsulatum)) AND India	655	27
11.	Cryptococcus meningitis	(Cryptococcus OR Cryptococcosis OR cryptococcal meningitis OR cryptococcoma) AND (incidence OR prevalence OR burden OR frequency)	470	75
12.	Pneumocystis pneumonia	(Pneumocystis pneumonia OR pneumocystis jirovecii pneumonia OR PCP) OR (Incidence OR prevalence OR burden OR frequency)	323	41
13.	Talaromyces marneffei	(Talaromycosis marneffei OR Penicillium marneffei OR Talaromysis) AND (incidence OR prevalence OR burden OR frequency) AND INDIA	154	37
14.	Mucormycosis	(mucormycoses OR zygomycosis OR mucorales OR mucor) AND (incidence OR prevalence OR burden OR frequency) AND India	228	54
15.	Sporotrichosis	(Sporotrichosis OR sporothrix) AND (incidence OR prevalence OR burden OR frequency) AND India	55	13
16.	Tinea capitis	(Tinea capitis OR ringworm of the scalp) AND (incidence OR prevalence OR burden OR frequency) AND India	119	13

2. Details of number of studies identified from different databases

Name	Pubmed	Embase	Web of Science	Total	After merging	Selected articles
Candidemia	88	126	47	261	175	43
Candida peritonitis	10	22	4	36	27	10
Continuous ambulatory peritoneal dialysis related peritonitis	5	5	2	12	7	6
Esophageal candidiasis	17	42	10	69	50	12
Invasive Aspergillosis	59	128	64	251	174	7
Chronic pulmonary aspergillosis	61	92	78	231	151	4
Allergic bronchopulmonary aspergillosis	74	109	58	241	180	19
Severe asthma with fungal sensitization	24	26	19	69	45	3
Mucormycoses	165	71	26	262	228	54
Talaromyces marneffei	48	78	58	184	67	37
Sporotrichosis	38	21	11	70	55	13
Cryptococcosis meningitis	251	318	147	716	470	75
Pneumocystis pneumonia	98	166	59	323	263	41
Histoplasma	322	593	208	1123	655	27
Tinea capitis	47	79	16	142	119	13

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(The Studies marked in bold are the ones which have been used for computing fungal burden of India in this manuscript)

Contents:

Search outcomes and details of papers found for

1. **Candidemia**
2. **Candida peritonitis**
3. **Continuous ambulatory peritoneal dialysis related peritonitis**
4. **Esophageal candidiasis**

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1. Candidemia

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Region	No of patients	Prevalence/Burden/ Frequency	Others
1	Agrawal et al.[1]	2013	July 2011 to June 2013	Observational study	NA	Medical ICU Patients	New Delhi	21 isolates of candida in blood of 6006 ICU admissions	3.5 per thousand ICU admission	candidemia was labeled as blood culture positive for candida
2	Awasthi et al. [2]	2011	January 2006 to February 2007.	nested case–control study	Paediatrics 1-12 years	From general paediatrics ward, who developed fever after 48 h of hospital stay (suspected nosocomialseptice mia)	Lucknow, UP	24 Candidemia out of 323 patients	7.4%	Children in cohort whose blood culture was positive for Candida were cases
3	Banerjee et al. [3]	2015	1 year	Prospective study	Adults and Pediatrics	All blood isolates received from patients during this period were screened for candidemia prospectively, Tertiary hospital	Mangalore, Karnataka	80 (No denominator given)	-	All hospitalized patients with a positive blood culture for Candida were included in this study
4	Baronia et al.[4]	2014	NA	NA	Adults*	Critically ill non-neutropenic ICU patients	Lucknow, UP	5 out of 50 patients	10%	-
5	Basu et al.[5]	2017	September 2010 to August 2015	Retrospective study	Paediatrics (Neonates)	All inborn units	Varanasi, UP	114 out of 13346 neonates born and 3128 neonates admitted	0.9% of total deliveries and 3.6% of total admissions	Candidemia was defined as at least one pure growth of Candida species in blood culture within 72 hours of inoculation, in presence of clinical features suggestive of sepsis
6	**Chakrabarti et al[6]**	**2014**	**April2011 through September 2012**	**Prospective, nationwide, multicentric, observational study**	**Adults and pediatrics**	**27medical and surgical ICUs across India**	**Chandigarh**	**1400 ICU-acquired candidemia patients out of 215112 admissions**	**6.51 cases/1,000 ICU admissions (95 % CI 6.18–6.86**	**Candidemia was defined as the isolation of Candida species from blood cultures. A case was defined as ICU-acquired candidemia if it occurred more than 48 h after ICU admission or less than 48 h after discharge from ICU**

7	Chakrabarti et al.[7]	2020	April 2011 to September 2012	Prospective multicentre observational study	Paediatrics	27medical and surgical ICUs across India	Chandigarh	487 children had candidemia out of total 1400 candidemic patients	The majority of the candidemia cases were among neonates (273/487; 56.1%; median age: 7 days) as compared to infants (76/487; 15.6%; median age: 2.4 months) and older children (138/487; 28.3%; median age: 6 years. Age-specific admission and candidemia rates were, however, unavailable	Candidemia was defined as the isolation of Candida species from blood cultures. A case was defined as ICU-acquired candidemia if it occurred more than 48 h after ICU admission or less than 48 h after discharge from ICU
8	Chakraborti et al.[8]	2018	from 2015 to 2016	Prospective observational study	Adult* (max≥60 years)	patients on long-term ventilation (>7 days)	New Delhi	4 out of 41	10%	The samples for fungal culture were inoculated on Sabouraud's dextrose agar with and without antibiotic and incubated at 25°C and 37°C
9	Chander et al. [9]	2013	July 2009 to December 2009	Retrospective study	Adults	Out of blood samples received for processing	Chandigarh	27 Candidemia out of 4651 samples	0.6%	An episode of candidemia was identified when the Candida was isolated from the blood culture of the patient; the second episode was defined if it occurred at least 30 days after the first episode
10	Charoo et al. [10]	2019	June 2016 to May 2018	Prospective cohort study	Paediatrics (Neonates)	Very low-birth weight (VLBW) and extremely low-birth weight (ELBW) with suspected fungal sepsis were enrolled in a NICU of a tertiary care hospital	Srinagar, J&K	54 Candidemia out of 64 invasive candidiasis in total 551 VLBW and ELBW infants	9.8%	A case of invasive candidiasis was defined as positive blood culture and/or CSF culture and/or urine culture by suprapubic tap of pure growth of Candida species with clinical features supportive of Candida sepsis.
11	Chowta et al. [11]	2007	1999 to 2004	Prospective study	Paediatrics above 12 years and adults	All in-patients who had shown signs and symptoms of nosocomial blood stream infection were screened for candidial infection	Mangalore, Karnataka	22 candidemia out of 255 patients screened	8.6%	Patients who showed positive cultures
12	Dewan et al. [12]	2015	November 2010 to April 2012	Prospective Observational study	Paediatrics and adults	Consecutive patients with hematological malignancies with	Dehradun, Uttarakhand	15 out of 150 patients	10%	Recovery of any Candida species from blood cultures

						a febrile episode				
13	Giri et al. [13]	2013	November 2008 to October 2009	NA	Paediatrics and adults	All blood isolates received from ICU patients	Chennai, Tamil Nadu	39 samples out of 5976 patients	0.65%	Blood culture positivity
14	Goel et al. [14]	2017	May 2011 to January 2017	Retrospective study	Adults and paediatrics	cancer and stem cell transplantation centre in eastern India	Kolkata, West Bengal	89 blood culture positive out of 16528 blood cultures from 6140 patients. Total 17000 patients admitted during the period	5.2 per 1000 admissions	NA
15	Gupta et al. [15]	2011	January 2007 to December 2010	Retrospective study (Abstract only)	Adults	combined medical & surgical ICU adult patients	New Delhi	109 episodes of Candidemia	1.12/1000 patient-days	ICU acquired candidemia was defined as positive blood culture for Candida after 48 h of admission to the ICU
16	Gupta et al. [16]	2015	2006 to 2010	Retrospective study	Adults	Medical and surgical ICU patients	New Delhi	144 episodes of candidemia	Overall the incidence of candidemia was 1.17/1000 ICU admissions. The incidence of C. glabrata candidemia was 0.21/1000 ICU admissions	patient was considered to have candidemia if C. glabrata was isolated from at least one blood culture
17	Juneja et al. [17]	2012	18 months	Retrospective cohort study (Abstract only)	NA	Medical ICU	New Delhi	56 Candidemia Out of 3142 ICU patients	17.8/1000 admissions	NA
18	Juyal et al.[18]	2013	January 2012 to December 2012	Prospective study	Paediatrics (Neonates)	NICU	Srinagar Garhwal, Uttarakhand	132 Candidemia out of 548 patients	24.1%	Candidemia was defined as the presence of at least one positive blood culture containing pure growth of Candida spp. with supportive clinical features
19	Kaur et al.[19]	2020	January 1999 to December 2018	Retrospective study	Adults and Paediatrics	From tertiary care public sector hospital (all types of ICU and wards)	Chandigarh	7927 out of 602963 blood samples	1.31%	Candidaemia was defined as the isolation of Candida species from blood at least once in the presence of clinical features of sepsis
20	Kaur et al.[20]	2016	NA	Prospective study	Adults and Paediatrics	Symptomatic HIV positive patients attending outpatient departments (OPDs) or antiretroviral treatment clinic (ART clinic) or admitted in the medical wards	New Delhi	8 candidemia out 280 patients	2.9%	Fungal culture was done on Sabouraud dextrose agar with chloramphenicol(16mg/mL) and with and without cycloheximide, blood agar, and brain heart infusion agar.
21	Khan et al. [21]	2012	January 2011 to December 2011	Retrospective study (abstract only)	NA	Admitted critically patients	Mohali, Punjab	16 candidemia out of 930	1.7%	NA
22	Kindo et al. [22]	2011	October 2008 to	NA (Abstract only)	NA	All blood isolates received from	Chennai, Tamil Nadu	39 candidemia out of 5976 ICU	0.7%	A case of candidemia was defined as a patient with at

			November 2009			ICU		patients		least one blood culture positive for Candida at least 48 h of admission into ICU.
23	Kotwal et al. [23]	2011	18 months	Prospective study	Adults and Paediatrics	General ICU and Paediatrics ICU	Dehradun, Uttarakhand	41 candidemia out of 96 patients	42.7%	Recovery of any Candid aspecies from at least 1 blood culture sample was taken as evidence of candidemia.
24	Lamba et al. [24]	2019	May 2014 to April 2015	Prospective observational study	Paediatrics (neonates)	from neonates admitted in NICU and wards of pediatric hospitals of tertiary care hospital	Jaipur, Rajasthan	32 candidemia out of 850 samples	3.8%	Candidemia was diagnosed by isolation of Candida species from at least one positive blood culture con-taining pure growth of Candida species with supportive clinical features
25	Marak et al. [25]	2018	January 2016 -2017	Prospective study	Adults	Patients admitted to the ICU in a tertiary care hospital.	Lucknow, UP	-	9% (prevalence)	-
26	Nazir et al. [26]	2018	January 2016 to December 2016	Prospective observational study	Paediatrics (neonates)	From clinically diagnosed septicemic neonates	Jammu and Kashmir	80candidemia out of 424 samples	18.9%	Candidemia was defined as at least one positive blood culture for Candida species in the presence of signs and symptoms of sepsis.
27	Oberoi et al. [27]	2012	1999 and 2008	Retrospective study	Adults and paediatrics	clinically suspected to have septicaemia	New Delhi	1206 Candidemia out of 69010 Blood cultures	1.7% 6.84 episodes /10,000 patient-days/ year (range 2.46-11 episodes)	All Candida species isolated from blood specimens submitted for culture from patients of all age groups and either sex clinically suspected to have septicaemia were included in the study
28	Paswan et al. [28]	2013	2009 to 2011	Prospective observational study	Adults and paediatrics (Patients aged > 12 years)	Patients having >8 out of 16 risk factors and with ICU stay >2 days were included in the study.	Varanasi, Uttar Pradesh	53 candidemia out of 206 patients	25.7%	Candidemia was defined as at least one positive blood culture for Candida spp. in patients with signs or symptoms of infection.

29	Rajmane et al. [29]	2015	1995 to 2002	Observational study	NA	All clinically suspected critically ill patients after 48 hours of admission in Surgical ICU were included in the study	Karad, Maharashtra	14 candidemia out of 93 patients	15.1%	Blood culture positivity
30	Rajmane et al. [30]	2016	January 2011 to December 2012	Longitudinal hospital based Observational study	NA	The patients included in this study were all clinically suspected non-neutropenic critically ill patients after 48 hours of admission in MICU	Karad, Maharashtra	22 candidemia out of 111 patients	19.8%	Blood culture positivity
31	**Rudramurthy et al. [31]**	**2017**	**April 2011 and September 2012**	**Prospective study**	**Adults and pediatrics**	**27 medical and surgical ICUs across India**	**Chandigarh**	**74 *Candida auris* out of 1400 candidemia out of 215112 patients**	**0.03% (*Candida auris*)**	**A case of ICU-acquired candidemia was defined as the isolation of Candida species from blood cultures ob-tained.48 h after ICU admission or,48 h after discharge from an ICU**
32	Sahni et al. [32]	2005	NA	NA (abstract only)		Hospitalized patients that developed signs and symptoms of nosocomial bloodstream infections were screened for candidemia	New Delhi	7 candidemia out of 101 patients	6.9%	-
33	Shankarnarayan et al. [33]	2018	NA	NA (Abstract only)	Pediatrics (Neonates)	Neonates admitted to Neonatal ICU	Chandigarh	21 Candidemia out of 108 patients. (7 developed *C. tropicalis* candidemia)	19.4%	-
34	Shastri et al. [34]	2020	April 2016 to September 2017	Prospective observational study		Medical ICU patients	New Delhi	108 patients with candidemia	Incidence was 6.75/1000 ICU bed days. (Candida auris: 39.9%)	Candidemia was defined as the isolation of Candida

					NA					species single or multiple times from blood cultures. A case was defined as ICU ac-quired candiddemia if it occurredN48 h after ICU admission orb48hafter discharge from ICU
35	Singh et al. [35]	2011	April 2008 to December 2009	Prospective laboratory-based surveillance study	Adults and Paediatrics	Lab based surveillance study in a level 1 trauma centre	New Delhi	89 episodes of candidemia occurred in 89patients out of a total of 6519 blood cultures in 3225 patients	The infection rate was 2.76 % and the incidence was 0.71 episodes per 1000patient days and 27.6 cases per 1000 admissions	An episode of candidaemia was defined as the isolation of Candida species from a single positive blood culture
36	Singhi et al. [36]	2004	April 1993 to July 1996	Retrospective study	Paediatrics	Admitted to PICU	Chandigarh	64 candidemia out of 1450 patients	4.4%	Patients were categorized as symptomatic and asymptomatic, and both these groups were compared. Symptomatic candidemia was defined as candidemia with symptoms and signs of sepsis. Asymptomatic patients of candidemia were those who had no symptom or sign of sepsis but had at least two consecutive blood cultures positive for Candida
37	Tak et al .[37]	2014	January 2009 to July 2012	Retrospective study	Adults and	All patients diagnosed as having	New Delhi	212 isolates from 157 candidemic	The overall incidence of candidemia (patients) at our center was 7.76 per	Candidemia was defined as the

					Paediatrics	candidemia were included in the study at a tertiary care trauma centre		patients out of a total 20,240 admitted patients	1000 admitted patients. In the ICU, the incidence was 14.95 per 1000 ICU admissions and the incidence in other wards was 4.09 per 1000 admissions	isolation of any Candida spp. from one or more blood culture samples of a patient
38	**Tan et al. [38]**	**2015**	**1 July 2010 to 30 June 2011**	**Cross sectional study**	**NA**	**Fungi isolated from clinical specimens in hospitalized (Ward and ICU) patients**	**Four hospitals in India**	**333 episodes of candidemia**	**1.94 per 1000 discharges and 1.24 per 1000 patient-days**	**-**
39	Tejan et al.[39]	2017	January 2012 to June 2013	Prospective study	Adults and Paediatrics	Patients admitted in intensive care unit for >48 hours were included	Chandigarh	48 isolates out of 720	2.5% (patients) 6.6% (isolates)	-
40	Thacker et al. [40]	2014	1 January 2013 to 31 December 2013	Retrospective observational study	Paediatrics	Samples sent for culture from pediatric oncology services	Mumbai, Maharashtra	14 candidemia out of 6709 cultures	0.2%	-
41	Wattal et al. [41]	2014	January 2008 to December 2011	Retrospective study	NA	Consecutive blood cultures from various intensive care unit patients in the hospital	New Delhi	659 candidemia out of 22491 cultures	2.9%	-
42	Xess et al.[42]	2007	January 2001 to December 2005	Retrospective study	Adults and paediatrics	This study was done in blood samples	New Delhi	439 candidemia (in 275 patients) out of 7297 samples	6%	-
43	Verma et al. [43]	2003	NA	(Abstract only)	NA	Blood samples from patients suspected to have blood stream infection at least 48 hours after admission	Lucknow, UP	21 candidemia out of 4871 patients	0.4%	-

*predominantly adults or only adults, exact distribution is not mentioned in study

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2. Candida peritonitis

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Region	No of patients	Prevalence/Burden/ Frequency	others
1	Bhargava et al.[1]	2013	January 2011 to December 2011	Observational study	Adults*	Patients with cirrhosis and ascites	Gurgaon, Haryana	2 out 219 patients	0.9%	Criteria not mentioned
2	**Gupta et al.[2]**	**2011**	**From 2006 to 2008**	**Observational study**	**Paediatrics and adults**	**PD fluid samples werecollected from patients with cloudy dialysate and a PD fluid effluent white blood cellcount of more than 100/mL with more than 50% neutrophils,**	**Bangalore, Karnataka**	**2 out of 90 PD fluid samples from 61 patients**	**2.2% (Candida Peritonitis)**	**BACTEC aerobic culture**
3	Indumathi et al.[3]	2009	From 2000 ot 2007	Retrospective study	Paediatrics and adults	In CAPD patients	Chennai, Tamil Nadu	30 out of 185 (fungal peritonitis) 50% had Candida	8.1%	The diagnostic criteria for fungal peritonitis included CAPD effluent cell count of 100 or more WBCs per microlitre, differential count of more than 50% polymorphonuclear cells and isolation of the fungus
4	Jindal et al. [4]	2015	January 2011 to June 2013	NA	Adults* (35 ±13)	140 consecutive patients of gastro-intestinal perforation	Faridkot, Panjab	68 out of 140(including mixed growth of candida) 9 out 140 (pure growth of candida)	48.6% (mixed) 6.4% (pure)	Sabourauddextrose agar (SDA)
5	Kandasamy et al.[5]	2019	From august 2017 to July 2018	Retrospective study	Adults* (mean age ~ 47 years)	Patients admitted with decompensated liver disease (DCLD)	Chennai, Tamil Nadu	10 out 359 (Candida albicans/non albicans)	2.8%	Details not mentioned
6	Kumar et al. [6]	2014	from January 2005 to January 2012	Retrospective study	Adults* (mean age ~ 52 years)	end stage renal disease (ESRD) patients initiated on continuous ambulatory peritoneal dialysis (CAPD)	Bengaluru,Karnataka,	17 (Candida isolates) out of 102 peritonitis episodes in 224	7.6%	The diagnosis of FP was based on the isolation of fungi from PD fluid in the setting of classical features of peritonitis (fever, pain abdomen, cloudy peritoneal effluent containing 100 white blood cells/µl

										or greater with at least 50% polymorphonuclear cells).
7	Pindi et al.[7]	2020	1 year	Prospective observational cross-sectional study	Adults* (mean age ~45 years)	Clinically suspected peritonitis patients undergoing CAPD	Hyderabad,Telangana	4 out of 100 episodes of clinically suspected peritonitis in 75 patients	5.3 %	Automated blood culture method, conventional brain–heart infusion(BHI) broth inoculation, centrifugation[and water lysis
8	Prakash et al.[8]	2008	May 2005 to September 2006	Prospective study	Adults* (mean age ~37 years)	Consecutive patients with spontaneous gastrointestinal perforation peritonitis, who were referred for surgery	Jabalpur,Madhya Pradesh	13 out of 84	15.5%	the samples were inoculated on MacConkey agar plates (at 37 ºC for 24 hours)
9	Prasad et al.[9]	2004	From October 1993 to November 2001	Retrospective study	Adults*	Patients with end stage renal disease (ESRD) started on CAPD	Lucknow, Uttar Pradesh	25 episodes out of 196 patients having peritonitis in total of 261 patients followed up	9.6%	cultured on Blood agar, MacConkey agar, biphasic brain heart infusion and Sabouraud dextrose agar (Difco, USA) media
10	Verma et al. [10]	2018	From 2008 to 2017	Retrospective study	Adults and Paediatrics (min-max 12-77 years)	ESRD patients who were on continuous ambulatory peritoneal dialysis.	Tirupati,Andhra Pradesh	11 out of 18 patients having peritonitis out of 180patients followed up	6.1%	10% KOH mount and Sabouraud's dextrose agar

* predominantly adults or only adults, exact distribution is not mentioned in study

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3. Continuous ambulatory peritoneal dialysis related peritonitis

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Region	No of patients	Prevalence/ Burden/Frequency	others
1	Indhumathi et al. [1]	2009	From 2000 ot 2007	Retrospective study	Paediatrics and adults	In CAPD patients	Chennai, Tamil Nadu	30 out of 185 (fungal peritonitis) 50% had Candida	8.1%	The diagnostic criteria for fungal peritonitis included CAPD effluent cell count of 100 or more WBCs per microliter, differential count of more than 50% polymorphonuclear cells and isolation of the fungus
2	Kumar et al. [2]	2014	from January 2005 to January 2012	Retrospective study	Adults* (mean age ~ 52 years)	end stage renal disease (ESRD) patients initiated on continuous ambulatory peritoneal dialysis (CAPD)	Bengaluru, Karnataka,	17 (Candida isolates) out of 102 peritonitis episodes in 224	7.6%	The diagnosis of FP was based on the isolation of fungi from PD fluid in the setting of classical features of peritonitis (fever, pain abdomen, cloudy peritoneal effluent containing 100 white blood cells/µl or greater with at least 50% polymorphonuclear cells).
3	Pindi et al. [3]	2020	1 year	Prospective observational cross-sectional study	Adults* (mean age ~45 years)	Clinically suspected peritonitis patients undergoing CAPD	Hyderabad, Telangana	4 out of 100 episodes of clinically suspected peritonitis in 75 patients	5.3 %	Automated blood culture method, conventional brain–heart infusion (BHI) broth inoculation, centrifugation[and water lysis
4	Prasad et al. [4]	2004	From October 1993 to November 2001	Retrospective study	Adults*	Patients with end stage renal disease (ESRD) started on CAPD	Lucknow, Uttar Pradesh	25 episodes out of 196 patients having peritonitis in total of 261 patients followed up	9.6%	cultured on Blood agar, MacConkey agar, biphasic brain heart infusion and Sabouraud's dextrose agar (Difco, USA) media
5	Ram et al.[5]	2008	January 1998 to February 2008	Retrospective study	Adults	End-stage renal disease (ESRD) patients initiated on CAPD treatment	Hyderabad, Andhra Pradesh	28 candida species were found out of 303 patients	9.2%	The diagnosis of FP was made based on the presence of a peritoneal-fluid cell count of 100/ _ l or greater, with a differential count showing more than 50% polymorphonuclear cells and a culture positive for fungi
6	Verma et al. [6]	2018	From 2008 to 2017	Retrospective study	Adults and Paediatrics (min-max 12-77 years)	ESRD patients who were on continuous ambulatory peritoneal dialysis.	Tirupati, Andhra Pradesh	11 out of 18 patients having peritonitis out of 180 patients followed up	6.1%	10% KOH mount and Sabouraud's dextrose agar

Reference

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4. Esophageal candidiasis

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Paediatrics	Type of patients	Region	No of patients	Prevalence/Burden/Frequency	others
1	Badarinarayanan et al.[1]	2000	April, 1998 to May 1999	NA`	Mainly Adults	Patients reporting voluntarily to a gastroenterologist (non immune suppressed)	Tirunelveli, Tamil Nadu	61 positive out of 933	6.5%	Upper GI endoscopy was performed in all these patients and biopsy specimens were taken from the site of lesions
2	Dhanlakshmi et al. [2]	2015	NA	Prospective study	Adults	Individuals who had varying complaints related to gastrointestinal tract (HIV negative)	Madurai, Tamil Nadu	61 positive out of 933	6.5%	All these people were subjected to upper gastro intestinal endoscopy with biopsy.
3	Jain et al.[3]	2018	September 2017 to June 2018	Retrospectives study	Mostly adults	CLD with Portal hypertension who underwent upper GI endoscopy	Chandigarh	26 out of 650	4%	diagnosis of EC was primarily based on endoscopic findings and KOH preparations
4	Javali et al. [4]	2015	December 2011 to August 2013	Prospective study	Adults and Paediatrics	Patients were from two categories: Inpatients-referred and emergency, Outpatients received through OPD.	Kolar, Karnataka	25 out of 600	4.2%	-
5	Kathuria et al. [5]	1995	January 1983 and December 1992	Prospective study	Adults and Paediatrics	Patients with GI (including pancreatic) complications that developed after transplant and before graft failure were included in the study.	Chandigarh	19 patients out of 265	7.2%	-
6	Kumar et al.[6]	2019	December 2018 to may 2019	Cross-sectional descriptive study (Abstract only)	NA	Patients presenting with dysphagia	Chennai, Tamil Nadu	5 out of 197	2.5%	-
7	Panigrahi et al. [7]	2017	December 2016 to July 2017	NA (Abstract only)	Mostly adults	Patients with history of dysphagia	Cuttak, Odisha	5 out of 146	3.42%	-
8	Rajasekaran et al. [8]	2009	2002 to 2004	Retrospective study	Paediatric	Electronic medical records from patients diagnosed with HIV were analyzed	Chennai, Tamil Nadu	238 out of 1768	13.5%	-
9	Ravikumar et al. [9]	2010	November 2007 to October 2009	Prospective observational study	Adults	All HIV patients with upper GI symptoms	Banglore, Karnataka	14 out of 50 patients	28%	HIV patients with other associated immunocompromised 26 states, chronic liver disease, chronic renal failure, steroid therapy, chronic NSAIDs and antifungal

										therapy were excluded
10	Singh et al. [10]	2012	June 2009 to June 2012	NA (Abstract only)	Adults and paediatric	Patients presenting with dysphagia	Amritsar, Punjab	8 out of 160	5%	-
11	Toshniwal et al. [11]	2013	January 2011 to December 2012	NA (Abstract only)	Adults and paediatric	Patients who presented with GI and Hepatobiliary system manifestations	New Delhi	7 (3 in HAART naïve and 4 in HAART experienced) 74[HAART naïve (36) and HAART experienced (38)]	10% patients in HAART experienced group and in 7% patients in HAART naïve group	-
12	Verma et al. [12]	2021	January 2019 to March 2020	Longitudinal nested case-control study	Adults	Patients with cirrhosis of any etiology	Chandigarh	100 out of 2762 patients	3.6%	-

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(The Studies marked in bold are the ones which have been used for computing fungal burden of India in this manuscript)

Contents:

Search outcomes and details of papers found for

1. **Invasive aspergillosis**
2. **Chronic pulmonary aspergillosis**
3. **Allergic bronchopulmonary aspergillosis**
4. **Severe asthma with fungal sensitization**
5. **Mucormycosis**

1. Invasive aspergillosis

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Region	No of patients	Prevalence/Burden/Frequency	others
1	Chakrabarti et al.[1]	2019	Between April 2016 and September 2017	Observational study	Not mentioned	Consecutive ICU patients (47.5 % ventilated)	11 tertiary care centres across India	398 out of 41879 (IMI) 142/41879 of invasive aspergillosis	9.5 (range, 4.3–29.0) cases per 1000 ICU admissions of Invasive mould infection. Aspergillus were the commonest (82.1%) species isolated	Based on EORTC/MSG criteria. The test was considered positive when the serum and BAL optical density index (ODI) values were >0.5 and >.8, respectively.
2	Chakraborti et al.[2]	2018	from 2015 to 2016	Prospective observational study	Adult (max≥60 years)	patients on long-term ventilation (>7 days)	New Delhi	4 out of 41	9.8%	The molds were identified using lactophenol cotton blue mount (LPCB) and slide culture.
3	Durga et al.[3]	2018	August 2016 to March 2018	Prospective study	Above age of 14 years	Those with endotracheal intubation and/or central venous catheter for at-least three days and sepsis (not responding to 48 hours of intravenous antibiotic therapy)	New Delhi	11 out of 100	11%	Revised EORTC/MSG or Blot's criteria
4	George et al. [4]	2019	between November 2014 and February 2016	prospective observational study	Both adults and pediatrics	All consecutive consenting patients who underwent induction or salvage chemotherapy for acute myeloid leukaemia (AML) except for AML-M3	10 centres across India	53 out of 200 (Invasive fungal infection)	26.5% (IFI)	revised EORTC-MSG criteria.
5	**Jain et al. [5]**	**2015**	**between January 1996 and December 2011**	**Retrospective study**	**pediatrics**	**Patients with acute leukaemia <18 years**	**New Delhi**	**34 out 356**	**9.6% (IA)**	**EORTC-MSG criteria.**
6	Kaur et al.[6]	2017	from October 2008 to September 2011	prospective cross-sectional study	Mainly adults (17 to 61 years)	71 HIV-positive subjects presenting to the antiretroviral center or admitted in the ward with signs and symptoms suggestive of a lower respiratory tract infection	New Delhi	5 out of 71 (Invasive Pulmonary aspergillosis)	7% (IPA)	(serum galactomannan) OR (KOH mount culture and serum galactomannan) OR (Culture and serum galactomannan alone) OR (KOH mount and culture and serum galactomannan)
7	Verma et al.[7]	2019	Between 1 January 2016 and 31 December 2016	Retrospective study	Adult	patients with Acute on Chronic Liver Failure (ACLF) and admitted in Liver Intensive Care Unit	Chandigarh	14 out of 264	5.3% (IA)	Modified EORTC/MSG criteria

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2. Chronic pulmonary aspergillosis

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Region	No of patients	Prevalence/Burden/ Frequency	others
1	Kishan et al. (1)	2020	NA	Observational study	Adults	Old treated TB patients	Ambala, Haryana	39 out of 110	35.5%	Not immune compromised, with clinical signs and symptoms, Positive sputum and/or positive smear and/or culture for Aspergillus and/or positive lung histopathology suggestive of aspergillosis, suggestive chest imaging.
2	Sehgal et al. (2)	2021	1 January 2018 to 31 January 2020	Prospective study	Adults (mean age: 42 years)	Clinically stable patients with non-CF bronchiectasis	Chandigarh	196 had chronic aspergillus infection out of 258 patients	76%	Chronic *A. fumigatus* infection defined as serum *A. fumigatus*-specific IgG >27 mgA/L
3	Agarwal et al(3)	2012	January 2006 to December 2010	Retrospective	Adults	Patients with ABPA & central bronchiectasis (CB)	Chandigarh	8 out of 179 patients with ABPA-CB had Aspergilloma	-	'Aspergilloma' was defined by the presence of eccentric soft tissue opacity within a bronchiectatic cavity
4	Singla et al(4)	2021	1 February 2016-31 October 2016	Prospective observational	Adults	Patients with post TB sequelae		57 out of 100 patients with post TB sequelae had CPA	57 %	Patients were classified as CPA if they met the four Global Action Fund for Fungal Infections criteria

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3. Allergic bronchopulmonary aspergillosis

Sr No	Authors/ State	Year of publication	Time period of estimation	Type of study	Region	No of patients	Prevalence/Burden/Frequency	others
1	Kumar et al.[1]	2000	-	Observational study (settings not mentioned)	New Delhi	32 out of 200 patients with bronchial asthma	16%	? Rosenberg criteria
2	Chakrabarti et al[2]	2002	Jan 1991-Dec 1998	Retrospective Study among of hospitals records	Chandigarh	89 out of 651 patients with clinically suspected allergic bronchopulmonary aspergillosis (ABPA)	13.67% (i.e. patients with poorly controlled asthma, cough, purulent sputum, wheezing, dyspnoea, fever and malaise, chest pain and haemoptysis or expectoration of golden brownish sputum),	According to Rosenberg's criteria
3	Maurya et al.[3]	2005	-	Prospective study in outpatient department in tertiary university referral hospital	Delhi	8 out of 105 consecutive patients with Asthma	7.60%	Rosenberg criteria
4	Agarwal et al. [4]	2006	January 2002-December 2003	Prospective study in a chest clinic	Tertiary hospital in Chandigarh	126 out of 564 consecutive asthma patients had ABPA	22.3% (27.2% mentioned in the study)	They were considered to have ABPA id they met four of the following criteria: clinical diagnosis of asthma; elevated total IgE lever (ie, > 1,000 IU/mL); presence of specific IgE against A *fumigatus* detected (by enzyme-linked immunosorbent assay; > 0.35 kU/L), serum precipitating antibodies against A *fumigatus*; radiographic pulmonary infiltrates (fixed/transient); and proximal or central bronchiectasis seen on high-resolution CT (HRCT) scan.
5	Aggrawal et al.[5]	2007	January 2002 to June 2006	Retrospective analysis of prospectively collected data from chest clinic	Chandigarh	155 out of 755 consecutive patients with asthma	20.50%	They were considered to have ABPA id they met four of the following criteria: clinical diagnosis of asthma; elevated total IgE lever (ie, > 1,000 IU/mL); presence of specific IgE against A *fumigatus* detected (by enzyme-linked immunosorbent assay; > 0.35 kU/L), serum precipitating antibodies against A *fumigatus*; radiographic pulmonary infiltrates (fixed/transient); and proximal or central bronchiectasis seen on high-resolution CT (HRCT) scan.
6	Prasad et al.[6]	2007	January 2002 to December 2004	Observational study (setting not mentioned)	Lucknow	18 out of 244 consecutive patients with bronchial asthma	7.40%	Rosenberg criteria
7	Sarkar et al. [7]	2010	1 year	Observational study in a chest clinic	Kolkata	9 patients of ABPA out of 126 consecutive asthma patients	7.14%	Greenberger's criteria
8	Ghosh et al.[8]	2010	NA	NA	Kolkata	15 out of 215 consecutive extrinsic asthma patients	7%	-
9	Vaidya et	2013	2 years	Retrospective study	Chandigarh	8 out of 53 CF patients	15.1% in pediatric patients	-

	al.[9]			among pediatric Pulmonology Clinic		developed ABPA		
10	Chopra et al.[10]	2014	Not mentioned	Observational study details not mentioned	Patiala, Panjab	30 out of consecutive 100 Asthmatic patients	30% among 100 consecutive asthmatic patients, who visited a hospital	According to Greenberger criteria
11	Sharma et al.[11]	2014	-	cross-sectional study in chest clinic	New Delhi	6 patients had ABPA out of 33 cystic fibrosis patients	18.2% in pediatric patients	Criteria by cystic fibrosis foundation
12	Nath et al.[12]	2017	January 2011 to June 2013	Prospective observational study in pulmonary medicine outpatient	Lucknow, UP	76 out of 350 with clinical diagnosis of bronchial asthma	21.70%	The diagnosis of ABPA was made if the patients met the following diagnostic criteria: (a) Bronchial asthma; (b) Type I cutaneous reactivity to A. fumigatus antigen; (c) raised total serum IgE levels (>1000 IU/ml); (d) fleeting or fixed radiological opacities; (e) raised serum IgE specific against A. fumigatus (>0.35 kUA/L); (f) peripheral blood eosinophilia (>1000 cells/ml); and (g) HRCT of thorax showing proximal bronchiectasis.
13	Gupta et al.[13]	2018	January 2012 to September 2015	Observational study conducted in outpatient department	Bathinda, Punjab	68 out of 479 Consecutive patients above the age of 20 years with clinical diagnosis of bronchial asthma	14.20%	Rosenberg criteria
14	Kalaiyarasan et al[14]	2018	September, 2014 to May, 2016	Prospective study	New Delhi	9 out of 70 consecutive asthma patients	12.9% Between 15 and 55 years of age irrespective of sex, race and religion, attending the out-patient department of Allergy clinic, National Institute of Tuberculosis and Respiratory Diseases (NITRD), New Delhi	Greenberger's criteria
15	Singh et al.[15]	2018	-	-	Chandigarh	16 out of 117 patients with ABPA in CF	13.7% in pediatric patients attending the pediatric pulmonology unit	-
16	Bhankhur et al. [16]	2019	January 2016-June 2017	Prospective	Chandigarh	35 out of consecutive 150 asthma patients (50 severe asthma)	70% among severe patients and 23.3% among total asthma patients	Not mentioned (? ISHAM criteria)
17	Dhar et al.[17]	2019	June 1, 2015, to Sept 1, 2017	prospective, observational cohort study	31 participating centers across India	196 (8·9%) of 2195	8.9% This was among patients fulfilling the inclusion criteria (aged ≥18 years with bronchiectasis on CT of the chest and the clinical syndrome of bronchiectasis defined by the presence of cough, sputum production, or recurrent respiratory infections) and not the exclusion criteria (inability to give informed consent, bronchiectasis due to cystic fibrosis, and traction bronchiectasis associated with interstitial lung disease or another respiratory disorder)	ISHAM criteria
18	Kumari et al.[18]	2019	March 2016 to January 2018	Prospective cross-sectional study	New Delhi	12 out of 106 poorly controlled asthma patients out of total 235 asthmatic children. Consecutive children between 5 and 15 years of age with asthma attending Pediatric Chest Clinic, Pediatric outpatient	11.3% among poorly controlled asthma. 5.1% among asthmatic	ISHAM criteria

						or admitted in pediatric ward		
19	Kishan et al.[19]	2020	-	Observational study (? Retrospective study)	Ambala, Haryana	4 out of 110 sputum negative old treated pulmonary tuberculosis admitted in hospital. 39 patients were diagnosed with some form of aspergillosis	3.64%	Rosenberg–Patterson criteria

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4. Severe asthma with fungal sensitization

Sr No	Authors/ State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Region	No of patients	Prevalence/Burden/Frequency	others
1	Gupta et al. [1]	2018	NA	Observational study	Pediatric (7 to 15 years)	100 chidren with persistent asthma symptom duration >2 years and forced expiratory volume in first second >50% of expected were enrolled.	Chandigarh	100 patients with persistent asthma. 3 patients out of 17 patients with fungal sensitization had SAFS	17.6%	Fungal sensitization was described as positive SPT (wheel diameter more than 3mm larger than the negative control) to any of the fungal antigens and total serum IgE >200ng/ml
2	Kumari et al. [2]	2019	March 2016 to January 2018	Prospective cross-sectional study	Pediatric (5 to 15 years)	Poorly controlled asthma	New Delhi	106	61.3% (Aspergillus sensitization)	Children with 'partly controlled' or 'uncontrolled' asthma were considered as 'poorly controlled asthma' for the study
3	Rajagopal et al. [3]	2020	September 2016 to September 2017	Prospective cross-sectional study	Adults	Patients with Bronchial asthma	Lucknow, Uttar Pradesh	10 had aspergillus sensitization out of 24 patients with partly controlled or uncontrolled asthma.	41.7%	-

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5. Mucormycoses

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Clinical Specimen	IC/ID	State of origin of patients	No of patients	Prevalence/Burden/Frequency	others
1	Agarwal et al.(1)	2015	October 2010 to March 2012	Prospective observational study	Adults (Mean age was 55.5 years)	COPD Patients visiting the outpatient clinic	Skin Prick Test	IC	Delhi	1 out of 55 patients had sensitization to Rhizopus	1.8%	
2	Agarwal et al./Lucknow(2)	2012	3 years	Prospective study	Adults and pediatrics (8-72 years)	Consecutive patients with CNS fungal infections	The diagnosis of fungal infection was based on positive fungal culture in CSF or biopsy material	Both IC and ID	Lucknow	7 out of 39 patients had zygomycosis	17.94%	
3	Bal et al./Chandigarh(3)	2012	October 2009 and february 2010	Observational study	Adults (24 to 65 years)	Fatal H1N1 influenza	Post-morten Biopsy specimens from lung and liver and autopsy	IC	Chandigarh	1 pulmonary zygomycosis out of 9 patients	11.1%	
4	Bala et al./Chandigarh(4)	2015	January 2010 to June 2011	Prospective study	The mean age of the patients was 40.43 years	Mucormycosis patients		Both IC and ID	Chandigarh	38 patients with zygomycosis or mucormycosis	61.5% had rhino orbital	
5	Chakrabarti et al./ Chandigrh(5)	2009	July 2006 to December 2007	Prospective study	Neonates and adults (4 days to 72 years)	Zygomycosis patients	Multiple Specimen	Both IC and ID	Chandigarh	75 cases of zygomycosis were recorded	48% ROCM	
6	Chakrabarti et al./Chandigarh (6)	2001	1990 to 1999	Retrospective study	Adults and pediatrics	Zygomycosis patients	Multiple Specimen	Both IC and ID	Chandigarh	129 cases	44.2% ROCM	
7	Chakrabarti et	2006	2000 to	Retrospective	Adults and	Zygomycosis		Both IC	Chandigarh	178 cases	54.5%	73.6% had

	al./Chandigarh (7)		2004	study	pediatrics	patients		and ID			ROCM	uncontrolled diabetes (131)
8	Chakrabarti et al.(8)	2019	April 2016 to September 2017	retrospective, multicentric, non-interventional, observational study	Adults	ICU patient with invasive mould infection	Multiple specimen	Both IC and ID	Chandigarh, Delhi, Ahmedabad, Bhopal, Kolkata, Hyderabad, Bengaluru, Vellore, Chennai	25 Mucorales out of 398 ICU patient with invasive mould infection	14.4% Mucorales	
9	Chander et al./Chandigarh(9)	2018	January 2009 to December 2014	Prospective observational study	Adults and pediatrics	Patients suspected of mucormycosis	Multiple specimen	Both IC and ID	Chandigarh	82 cases of mucormycosis out of a total of 6365 samples received for mycological culture	1.2%	
10	Chander et al./Chandigarh(10)	2017	November 2013 to October 2014	Prospective study	Adults (31 to 60 years)	Adults	Skin biopsy	IC	Chandigarh	9 aseptate fungal hyphae (KOH) out of 23 cases with necrotizing cutaneous infection	39.1%	5 S. erythrospora 3 Apophysomyces variabilis and 1 was sterile
11	Chuhan et al./Muzaffarnagar (11)	2021			Adults and pediatrics (11 to above 60 years)	CSOM patients	Ear Swab	IC	Muzaffarnagar	100 CSOM	2% mucor	
12	Chugh et al./Chandigarh (12)	1993			Adults(21-42 years)	Systemic fungal infections were identified in 19 of 310 patients (6.1%). Infection with *Cryptococcus neoformans* was observed in eight patients (42%), *Candida albicans* in seven (37%), mucor species in two (11%), *Aspergillus flavus* in one (5.5%), and a mixed infection		ID	Chandigarh	2 Mucor out of A total of 310 renal transplant patients	0.64%	

						with Aspergillus and Cryptococcus in one patient (5.5%)						
13	Das et al./Chandigarh (13)	2018	September 2006 to August 2013	Retrospective Observational study	Pediatrics	Children with Acute leukemia	Multiple specimen	ID	Chandigarh	9 mucor out of 781 children with Acute leukemia	16.4%	
14	Das et al./Chandigarh(14)	2009	2003 to 2007	Retrospective analysis	Adults and pediatrics	Chronic Rhinosinusitis		IC	Chandigarh	49 zygomycetes out of 284 FRS	17.3%	
15	Durga et al./New Delhi(15)	2018	August 2016 to March 2018	Prospective observational study	Adults (60 to 79 years) The mean age for the study population was 48.9 ± 19.8 years	ICU patients	ET aspirate	Both IC and ID	New Delhi	1 mucor out of 100 ICU patients	1%	Lichtheimia corymbifera
16	Gill et al./Amritsar(16)	2011	January 2003 to December 2008	Retrospecive study	Adults and pediatrics	Patients with suspected fungal corneal ulcer	Corneal snear	IC	Amritsar	4 mucor out of 72 cases of fungal corneal ulcers	5%	
17	Gochhait et al./Chandigarh(17)	2015	January 2011 to December 2013	Retrospective study	Adults and pediatrics (5 to 76 years)		FNAC from various lesions	Both IC and ID	Chandigarh	6 out of 66 fungal infections	9.1%	
18	Godara et al./Gujarat(18)	2011	January 2005 to December 2009	Retrospective, single-center, observational study	Adults (20 to 58 years)	Renal transplants	Multiple specimen	ID	Gujarat	16 mucor patient out of 1330 transplants	56.25% had Rhinocerebral mucormycosis	
19	Gupta et al./Chandigarh(19)	1999	January 1994 to July 1997		Adults (18 to 65 years)	Patients with paranasal sinus mycoses	Surgical specimen from paranasal sinus	IC	Chandigarh	3 mucormycosis Out of 18 patients with paranasal sinus mycoses	17%	
20	Gupta et al./New Delhi(20)	2017	December 2015 to May 2017	Prospective Study	Adults and pediatrics (16–81 years)	patients suffering from vision loss due to AIFRS	Surgically resected nasal mucosa	Both IC and ID	New Delhi	28 mucormycoses out of 33 patients with AIFRS 5 of 33 demonstrated	84% had mucormycoses and 15.15%	

										Mucor and *Aspergillus* species.		
21	Jagarlamudi et al/ New Delhi(21)	2000	January 1997 to July 1999	Retrospective Case records based study	Adults and pediatrics (6-66 years)	Acute leukemia patients	-	ID	New Delhi	1 mucor out of 91 leukemia patients	1.09%	
22	Jayalashmi et al./ Hyderabad(22)	2007	January 1997 to December 2005	Retrospective study	Adults and pediatrics (7-82 years)	Rhino cerebral Mucormycosis patients	-	Both IC and ID	Hyderabad	38 rhinocerebral mucormycosis patient		
23	Malik et al. (23)	1985		Observational study	Adults and pediatrics	Cerebral mycoses	Autopsy or biopsy material from brain		New Delhi	2 mucor out of 7 patients with cerebral mycoses		
24	Mehta et al./Karnataka(24)	2020	December 2011 to March 2019	Retrospective study	26 to 73 years	Patients with massive hemoptysis		Both IC and ID	Karnataka	1 mucormycosis among 12 patients with massive hemoptysis		
25	Mishra et al./ Pune(25)	2021	April 12, 2021 to May 31, 2021	Descriptive study	58.28 (±8.57) years	Hospitalized COVID-19 patients	Clinico-radiological suspicion with visualisation of broad branched aseptate fungal hyphae on KOH mount direct microscopy and histopathology specimen by fungal stains or isolation of zygomycetes on fungal culture	Diabetes, Steroid use	Pune	33 mucormycosis out of 953 COVID-19 patients)	3.36%	
26	Naik et al./New Delhi(26)	2015	January 1997 to May 2011	Retrospective study	Adults and pediatrics (7 to 67 years) (mean 32.3 years)	Patients with intracranial fungal granulomas (ICFGs),	Biopsy specimen	NA	New Delhi	7 mucor Out of 66 patients	10.6%	

27	Pamidimukkala et al./Telangana(27)	2020	1992 to 2017	Retrospective study	Adults and pediatrics (15 to 65 years)	Patients with Invasive mucormycoses	Various specimens	Both IC and ID	Telangana	Out of 148 patients with mucormycosis 24 patients were found with Apophysomyces species	16.21%	
28	Pandey et al./ New Delhi(28)	2018	January 2015 to December 2017		Adults and pediatrics (2 months to 65 years)	culture-positive cases of invasive mucormycosis	Various samples	Both IC and ID	Delhi, Chandigarh, Uttar Pradesh, Madhya Pradesh, Pune, Haryana, Rajasthan, Jharkhand, Bihar	17 isolates of Rhizopus microsporus		
29	Patel et al./Chandigarh(29)	2020	January 1, 2016 to September 30, 2017	Prospective observational study	Adults (35 to 58.5)	consecutive subjects with proven mucormycosis	Various samples	Both IC and ID	12 centers from India	342 out of 465 had diabetes	73.5%	
30	Patel et al.(30)	2021	September 1,2020 to December 31, 2020	Multicentre Retrospective study	Adults (Mean age was 53.4 years)	Mucormycosis patients	Various specimens	Both IC and ID	NA	Among 287 mucormycosis patients, 187 (65.2%) had CAM; CAM prevalence was 0.27% among hospitalized COVID-19 patients	65.15%	
31	Patel et al./ Gujarat(31)	2017	January 1, 2013 to April 30, 2015	Retrospective observational study	Adults and pediatrics (16 to 65 years)	Mucormycosis Patients			Gujarat	27 mucormycosis patients	51.9% had ROCM and 55.6% had uncontrolled	

											diabetes	
32	Patel et al./ Gujarat(32)	2017	2010 to 2015	Retrospective observational study	Adults and Pediatrics (15 to 85 years)	renal transplant (RT) patients on immunosuppression with invasive fungal infections	Bronchoalveolar lavage (BAL), blood, tissue, and wound swab samples	ID	Gujarat	1 mucor among 30 patient	3.3%	
33	Prakash et al./Chandigarh(33)	2019	January 2013 to December 2015	Prospective study	Adults, Pediatrics and Neonates (1 month to 85 years)	Proven/probable mucormycosis patients	Various Samples	Both IC and ID	Chandigarh and New Delhi, Bengaluru, Hyderabad	Out of 388 mucormycosis 124 were Rhizopus arrhizus (51.9%)	63.9 % had ROCM, 172 had Uncontrolled diabetes, (56.8%)	
34	Priya et al./Tamil Nadu(34)	2020	October 2015 to October 2019	Retrospective observational study	Adults (41 to 60 years)	Mucormycosis patients	Various specimen	Both IC and ID	Tamil Nadu	Out of 38 mucormycosis 28 had ROC and 22 (77%) had uncontrolled diabetes	73.68	
35	Punia et al./Chandigarh(35)	2017	2006 to 2017	-	Adults and pediatrics (12 to 75 years)	CSOM patients	CSOM surgical biopsy specimen	IC	Chandigarh	4 mucor out of 15 patients with CSOM		
36	Raizada et al./New Delhi(36)	2018	January 2015 and December 2015	Retrospective study	Adults 44.1 ± 13.9 years (range 16 to 73 years)	Diabetic patients with invasive fungal sinusitis	Sinus aspirate/ Biopsy	IC	New Delhi	11 mucormycosis out of 22	50%	-

37	Raj et al./Kolkata(37)	2015	24 months period	Cross sectional study	-	Clinically suspected chromoblastomycosis	Skin biopsy	IC	Kolkata	1 zygomycosis out of 20	5%	
38	Ramamurthy et al./Chennai (38)	2011	March 2008 to December 2010	Retrospective analysis	-	Orthotopic liver transplant patients	Various specimens	ID	Chennai	5 mucor out of 82 liver transplants	6.1%	
39	Ramanathan et al./Mumbai (39)	2020	January 2010 to December 2017	Retrospective analysis	Children	Children below 15 years of age undergoing treatment for leukemia/lymphoma with clinic radiologic and microbiologic evidence of IC fungal abscess were included	Various specimens	ID	Mumbai	2 mucor out of 8 invasive fungal infection	25%	-
40	Ravani et al./Gujarat(40)	2021	September 2020 to mid-March 2021	Retrospective, institutional cohort, interventional study	Mean of was 56.3 years	Rhino-orbital mucormycosis	Sinus biopsy	Both IC and ID	Ahmedabad, Gujarat	Out of 31 patients	61.2% were post covid 96.7% were diabetic	-
41	Roohani et al./ Uttar Pradesh(41)	2018	January 2015 to July 2016	Prospective study	Adults (31 to 40 years)	HIV patients	Expectorated sputum, induced sputum, bronchoalveolar lavage (BAL) endotracheal aspirates, pleural fluid and blood	ID	Uttar Pradesh	1 pulmonary mucor out of 150 patients.		
42	Sakhuja et al./Chandigarh(42)	2000	July 1980 to December 1999	Retrospective analysis	Mean age was 33.1±3.4	792 Renal transplant patients	-	ID	Chandigarh	6 mucor out of 79 renal transplant patients with CNS complications		

43	Satpathy et al./New Delhi(43)	2019	January 2001 to December 2016	Retrospective study	Adults (41–50 years)	Fungal keratitis	Corneal scraping	-	New Delhi	47 zygomycosis out of 4069 culture positive keratitis	1.2%	-
44	**Sen et al./Telanagana(44)**	**2021**	**January 1, 2020 to May 26, 2021**	**Retrospective, multicentric, non-interventional, observational study**	**The mean age was 51.9 (range, 12–88 years)**	**2826 Patients with COVID-19 and ROCM**	**Sinus aspirate biopsy**	**IC and ID**	**Throughout India**	**2826 Patients had ROCM associated with COVID-19**	**78% are diabetic**	**-**
45	Sethi et al./New Delhi(45)	2012	March 2008 to March 2010	-	-	CNS fungal infections	-	Both IC and ID	New Delhi	25 mucormycosis out of 50 CNS fungal infections	50%	-
46	Shanbag et al./Karnataka(46)	2019	September 2015 to September 2017	-	The mean age of patients was 49.8	Invasive fungal rhinosinusitis	Sinus Aspirate biopsy	IC	Karnataka	6 mucormycosis out of 14 invasive fungal rhinosinusitis	42%	
47	Sharma et al./Patiala(47)	1987	August 1976 to April 1977	-	Children and Adults	Corneal ulcer	Corneal scraping	-	Patiala	4 mucor out of 100 corneal ulcer	4%	-
48	Shekhar et al./ Tamil Nadu(48)	2019	1996 to 2016	Retrospective analysis	Mean age was 43.4 years	725 renal transplant patients	-	ID	Karnataka and Andhra Pradesh	11 mucor out of 67 IFIs in renal transplant patients	16.4%	-

49	Shukla et al./ Uttar Pradesh(49)	2014		Retrospective analysis	The mean age of patients in this study was 36.5 years (range; 15-65 years)	CNS mycosis patients	Biopsy of resected surgical specimen	-	Uttar Pradesh	7 mucor out of 10 CNS mycosis	70%	
50	Srinivasan et al./Haryana et al.(50)	2015	January 2013 to March 2014	Ambispective study	-	Liver transplant patients	-	ID	Haryana	3 mucor out of 634 liver transplant patients	0.5%	
51	Sundaram et al./Bangalore(51)	1989	1980 to 1982	-	Adults and pediatrics (<20 to > 50)	Corneal ulcers	Corneal scraping	IC	Tamil Nadu	3 mucor out of 68 mycotic keratitis		
52	Sundaram et al./Telangana(52)	2006	1988 to 2004	Retrospective study	Adults and pediatrics (5 to 75 years)	CNS fungal infection	Autopsy and biopsy	IC	Telangana	40 zygomycosis out of 130 cases of CNS fungal infection	30%	
53	Suresh et al./Tamil Nadu(53)	2016	July 2011 to July 2013	Prospective study	Adults and pediatrics (11-90 years)	100 patients with chronic rhinosinusitis	Sinus aspirate biopsy	IC and ID	Tamil Nadu	15 mucor out of 30 patients with fungal rhinosinusitis		
54	Vaideeswar et al./Mumbai(54)	2004	12 years	Retrospective study	Adults and pediatrics (5 months to 67 years)		Autopsy material		Mumbai	2 patients out of 20475 had mucormycosis	0.01%	

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Ray A et al, Burden of serious fungal infections in India, Supplementary data 4

(The Studies marked in bold are the ones which have been used for computing fungal burden of India in this manuscript)

Contents:

Search outcomes and details of papers found for

1. Sporotrichosis

Sr No	Authors/State	Year of publication	Time period of estimation	Type of study	Adult/Pediatrics	Type of patients	Clinical Specimen	IC/ID	State of origin of patients	No of patients	Prevalence/Burden/ Frequency	others
1	Bhat et al./ (1)	2016	January 2005 to January 2013	Prospective analytical study	Adults (14-74 years)	Subcutaneous mycosis	Skin biopsy histopathology fungal culture	IC	Karnataka	4 sporotrichosis out of 25 subcutaneous mycosis	16%	-
2	Bordoloi et al./ (2)	2015	April 2013 to March 2014	Prospective study	NA	15 consecutive patients with subcutaneous mycoses	Skin biopsy HPE KOH mount and fungal culture	NA	Dibrugarh, Assam	2 cases of lympho cutaneous sporotrichosis	13.3%	-
3	Chakrabarti et al. (3)	1994	Over 4.5 years	Case series	NA	culture proven patients of sporotrichosis	? Skin biopsy	NA	75% patients were from Himachal Pradesh	12	-	-
4	Devi et al.(4)	2006	July 1999 to June 2005	Retrospective study	Paediatrics and adults (11 to 83)	All cases diagnosed to be sporotrichosis were included in the study.	FNA cytology and culture	Both IC and ID	Manipur	46 were lymphocutaneous sporotrichosis	63.1% lymphocutaneous sporotrichosis	-
5	Gandham et al. (5)	2013	January 2010 to June 2012	Lab based study	Paediatric, adults and neonates	Patients suspected of having fungal infections	Various specimens	-	Maharashtra	3 *Sporothrix* Out of 704 samples		
6	Gandham et al. (6)	2018	January 2014 to December 2014	Retrospective cross sectional study. Lab based study	-	Patients with culture positive fungal infections	Various specimens	IC	Maharashtra	6 *Sporothrix* out of 603 samples		
7	Kolalpudi et al. (7)	2014	-	Prospective analysis	-	HIV Patients	Skin smears biopsy	ID	Andhra Pradesh	2 sporotrichosis out of 142 HIV patients	1.4%	-
8	Mahajan et al. (8)	2005	1990 to 2002	Hospital based retrospective study	Paediatrics and adults	103 patients with cutaneous sporotrichosis	histopathology, mycological reports and therapeutic response to saturated solution of potassium iodide (SSKI)	IC	Himachal Pradesh	50 had lymphocutaneous, 44 has fixed cutaneous	-	
9	Raj et al. (9)	2015	24 months	-	-	20 suspected cases of subcutaneous mycoses	-	-	Kolkata	1 sporotrichosis out of 20 cases	5%	
10	Sharma et al. (10)	2021	2010 to 2019	Retrospective study	Adults and paediatrics	152 Patients with cutaneous	Histopathology, laboratory culture	IC	Himachal Pradesh	Fixed cutaneous sporotrichosis was	-	

						sporotrichosis	of causative Fungus, and/or therapeutic response to saturated solution of Potassium iodide (SSKI).			seen in 83 (54.6%) patients, and 66 (43.4%) patients had lymphocutaneous sporotrichosis.		
11	Uppin et al. (11)	2008	January 2000 to September 2006	Retrospective study	Adults and paediatrics	Patients with lesions of bones of hands and feets	Bone biopsy	-	Hyderabad	1 sporotrichosis out of 52 bone lesions of hands and feet	1.9%	
12	Verma et al. (12)	2012	January 1992 to july 2010	Retrospective review	Adults and Paediatrics (1.5-88 years)	305 clinically suspicious cases of sporotrichosis	skin biopsies, scrapings and pus samples	-	Himachal Pradesh	100 cultural proven *Sporothrix schenckii*	32.8%	
13	Verma et al. (13)	2018	April 2013 to March 2017	Retrospective study	Adults and paediatrics	70 subcutaneous mycosis	Cutaneous biopsy	IC	Meghalya	16 *Sporothrix schenckii* out of 70	22.9%	

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2. Histoplasmosis

Sr No	Authors/ State	State	No of cases	Clinical Specimen	IC/ID	Prevalence	Type of study	Year of publication
1.	Goswami et al/West Bengal(1)	-	5	Chronic disseminated histoplasmosis. Bone marrow:3 Adrenal:2 Lymph node: 1 Spleen:1	IC:2/ID:3 (Diabetes: 2 HIV:1)	Feb 1996 -Sept 1997	Retrospective observational study	1999
2.	Kumar et al/Tamil Nadu(2)		9	Adrenal:9	IC:5/ID:4 (Diabetes:4)	3 years (1999-2002)	Retrospective observational study	2003
3.	Subramanian et al/Tamil Nadu(3)	West Bengal :7, Andhra Pradesh:4, Bihar:2, Assam, Orissa, UP, Tamil Nadu and Kerala:1 each, Bangladesh:1	19 (1 from Bangladesh and 18 from India)	Bone marrow aspirate:7 Adernal gland:5 Lymph node biopsy:4 Rectal biopsy:2 Skin biopsy:1 Liver biopsy:1	IC: 7 (COPD:1 None:4 Suspected TB:2) /ID:12 (Diabetes:5 HIV:4 Renal Transplant:2 Lymphoma:1)	10 years (Jan, 1989-Dec., 1999)	Retrospective observational study	2005

4.	Vishwanathan et al/Mumbai (4)	-	5	Biopsy from head and neck region (Lip;1, Hypopharynx:1, Larynx:1 tongue:1, Hard palate:1	ID:3 (DM:2 HIV:1) IC:1 Unknown:1	Over a period of 6 years (2000-2005)	Retrospective observational study	2007
5.	Arora et al /New Delhi(5)	-	6	Bone marrow biopsy patients with unexplained fever	NS	Over a period of 10 years, 6 patients of histoplasma in 365 patients unexplained fever who underwent bone marrow aspiration	Observational study	2009
6.	Rana et al/UP(6)	-	8	Adrenal:8	IC: 5/ID:3 (Diabetes:3)	~7 years (2002-2009), Out of 35 cases of adrenal fine needle aspiration	Retrospective observational study	2010
7.	Jaiswal et al/ UP(7)	-	5	Adrenal:5	IC:4/ID:1 (Diabetes;1)	2008-2010	Retrospective observational study	2011
8.	Singh et al/Haryana(8)	-	6	Upper lip biopsy:1 CT TBNA Lung:1 Lymph node FNAC:1Tongue ulcer biopsy:2 Larynx biopsy:1	IC:3/ID:3 (HIV:3)	-	Case series	2012

9.	Gopalakrishnan et al/Tamil Nadu(9)	West Bengal:11 Assam:9 Tripura:2 Jharkhand:1 Tamil Nadu:1	24	Oral cavity:6 Adrenal: 7 Bone marrow:3 Lymph node:2 Lung:2 Psoas abscess wall:1 Skin:1 Spine:1 Colon:1	IC:9/ID:15 (Diabetes:9 HIV:4 Chronic kidney diseas:1 Renal transplantation:1)	Jan 2002 – April 2011	Retrospective observational study	2012
10.	Deodhar et al/Tamil Nadu(10)	West Bengal:24	37	Bone marrow:8 adrenal:14 Not known:15	IC: 26/ID:11	Jan 2000 – Dec 2010	Retrospective observational study	2013
11.	Ranjan et al/Delhi(11)	-	7	Adrenal:4 Chest wall:1 Lymph node:2	IC:2/ID:5 (Diabtes:3 Chronic renal failure: 1 malnourished:1)	-	Retrospective observational study	2014
12.	De et al/West Bengal(12)	-	7	Bone marrow:6 Adrenal: 1 Skin Ulcer: 1	IC:7/ID:0	May 2009 – April 2014	Retrospective observational study	2015
13.	Kumar et al/Chandigarh(13)	-	5	Adrenal:5	IC:4/ID:1 (HIV:1)	10 year (May 2005-May 2015)	Retrospective observational study	2016
14.	Gajendra et al/Haryana(14)	-	12	Adrenal:11 Bone marrow:1 Epiglottis:1	IC:12	Jan 2012- Sept 2014	Retrospective observational study	2016
15.	Sharma et al/Haryana(15)	-	5 (North India:4, Myanmar:1)	Colon:3 Ileum:2	IC:1/ID:4 (HIV:1 Post transplant:1 Posttransplant Lymphoproliferative disorder:1old age:1	Jan 2014 – Dec 2015 (~ 2 years)	Retrospective observational study	2017

16.	Kaur et al/Delhi(16)	-	21	Histoplasma DXselect:21 (Antibody)	IC:0/ID:21 (HIV:21)	Oct 2008 -Sept 2011	Prospective cross-sectional	2017
17.	Gupta et al/Delhi(17)	UP:7 Bihar:2 Northeast:1 New Delhi:1 Not known:9	20	Skin biopsy:9 Palat:2 Larynx:2 Bone marrow: 3 Adrenal: 4 Lymph node:2 Liver:1 Peripheral blood smear:1	IC:11/ID:8 (HIV:3 Aplastic anemia:1 Immunosuppressants:2 renal transplant:1 CD4 T-cell lymphocytopenia:1) Not Known:1	2003-2015	Retrospective observational study	2017
18.	Bansal et al/Delhi(18)	-	13	Endoscopic ultrasound-guided fine-needle aspiration of enlarged adrenals in patients with pyrexia of unknown origin: A Single-center experience of 52 cases	NS	Over a period of six years EUS-FNA of enlarged adrenals was done in 52 patients for the etiological diagnosis of PUO	Retrospective observational study	2018
19.	Patel et al/Gujarat(19)	Rajasthan:5 Gujarat:7	12	Adrenal:2 Palate: 2 Pulmonary Nodule:1 Oral ulcer:1 Lymph node:2 Bone marrow:1 Skin:2 biopsy not done:1 (probable histoplasmosis)	IC:8/ID:4 (HIV:2 Autoimmune hepatitis on immunosuppressants:1 SLE on rituximab:1)	5½ years (Jan, 2012-Aug 2017)	Retrospective observational study	2018

20.	Mandavdhare et al/Chandigarh(20)	-	6	Esophagus:2 Colon:3 Stomach:1	IC:0/ID:6 (HIV:2 Diabetes:1 idiopathic CD4 lymphocytopenia:1 Gastrointestinal lymphoma: 1 Malnutrition:1)	1 year (2017-2018)	Retrospective observational study	2018
21.	Singh et al/UP(21)	UP:35 Bihar:5	40	Histology and/or culture of biopsied adrenal tissue	IC:17 (HIV sero negative)/ID:Diabetes:23)	Referred patient over 12 year (2006-2018)	Retrospective observational study	2019
22.	Singh et al/Haryana(22)	-	5	Biopsy from Head and Neck Gingivobuccal/Alveolus complex :2 Laryngeal:1 Nasal:1 Tongue nodule biopsy:1	IC:3/ID:2 (alcoholic chronic liver disease :1 rheumatoid arthritis on Immunomodulation:1)	Jan 2010-Jan 2019	Retrospective observational study	2019
23.	Sharma et al/Rajasthan(23)	Rajasthan:5	5	Adernal:5 Skin:1	IC:4/ID:1 (Diabetes mellitus:1)	3 year (2016-2019)	Retrospective observational study	2020
24.	Sengupta et al/West Bengal(24)	West Bengal:5	5	Palate:1 Oropharynx:1 Mouth:1 larynx: 1 Penis: 1	IC:5(HIV negative sero negative DM Negative)/ID:0	5½ years (July 2011 - Dec 2016)	Retrospective study	2020
25.	Rana et al/Haryana(25)	Rajasthan:2 West Bengal:1 UP:1 Haryana:1	5	Lymph node:2 Bone marrow:2 tongue:1	IC:0/ID:5(Post kidney transplant)	Cases presenting between 2013-2016	Case Series	2020
26.	Gunna et al/UP(26)	-	19	Adrenal:19	NA	Sept 2009-May 2019	Retrospective observational study	2020

27.	Ahuja et al/New Delhi(27)	-	7	Skin biopsy	IC (HIV sero negative)		Retrospective observational study	2021

IC- immunocompetent
ID- Immunosuppressed

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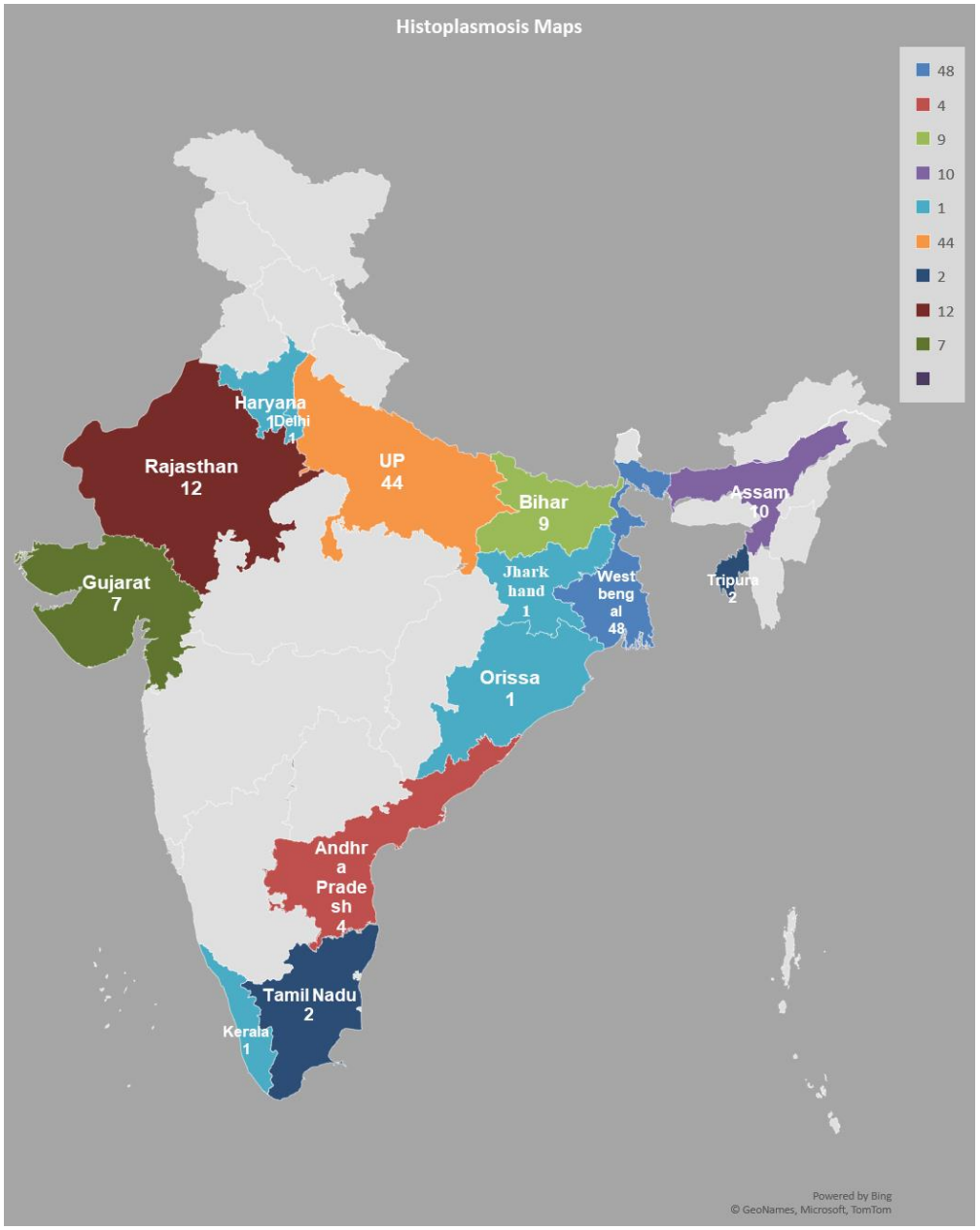
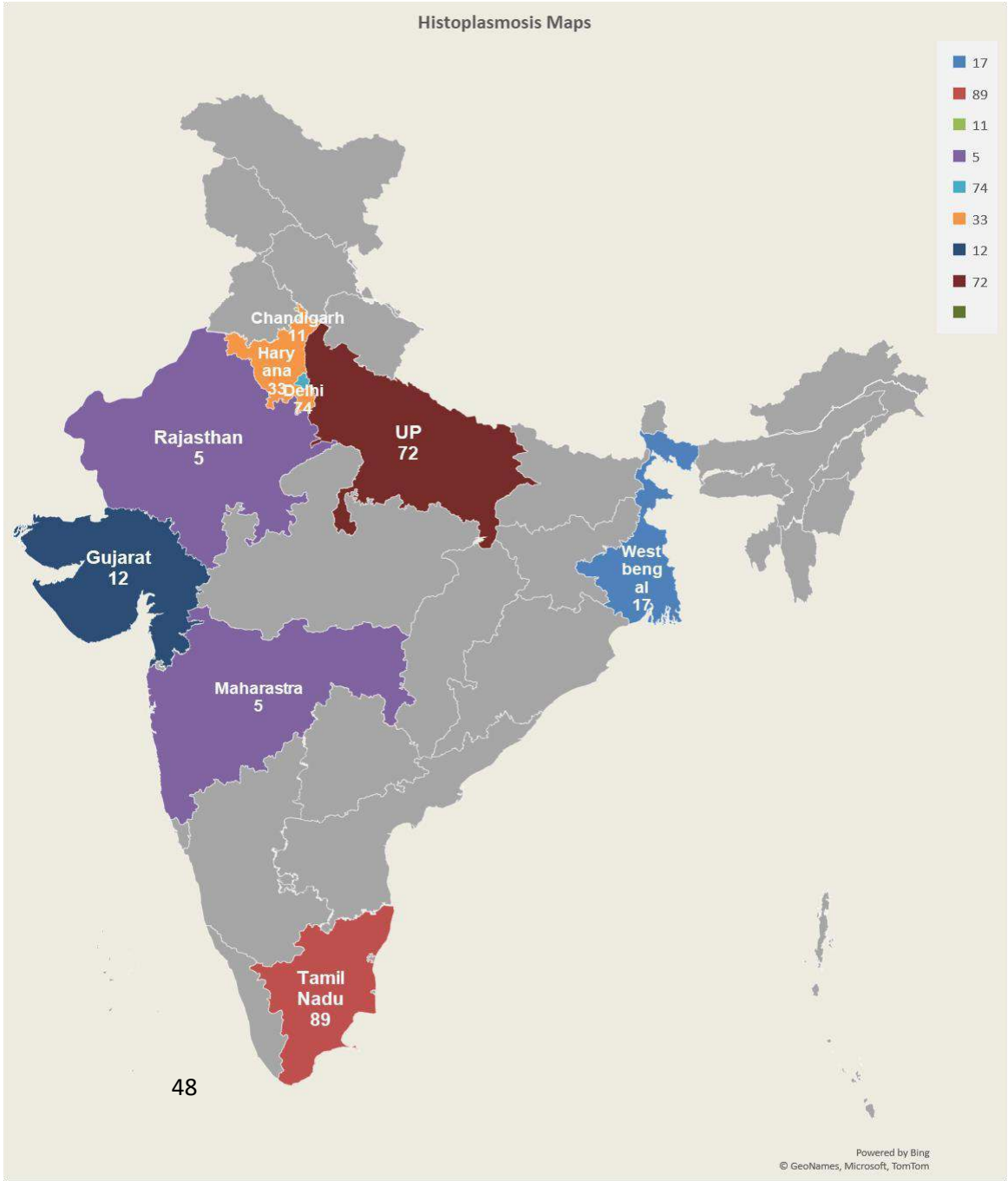
3. Epidemiology Maps for Histoplasmosis According to Statehood of Patients

State	No of cases
West Bengal	48
Andhra Pradesh	4
Bihar	9
Assam	1
Orissa	1
UP	44
Tamil Nadu	1
Kerala	1
Tripura	2
Jharkhand	1
Delhi	1
Rajasthan	12
Haryana	1
Gujarat	7



4. Epidemiology Maps for Histoplasmosis According to Statehood of Authors

Authors/State	No of cases
West Bengal	17
Tamil Nadu	89
Chandigarh	11
Maharashtra	5
Delhi	74
Rajasthan	5
Haryana	33
Gujarat	12
UP	72



5. Talaromycosis

Sr No	Authors	State/Region of patients	No of cases	Clinical specimen	No of PLHA cases	Prevalence	Type of study	Year publication
1	Singh et al(1)	Imphal, Manipur	4	Skin lesion	4	-	Case report	1999
2	Ranjana et al(2)	Imphal, Manipur	46	skin lesions, lymph nodes and/or blood	198	23.23%	Retrospective and prospective	2002
3	Varghese et al(3)	Assam	1	Skin lesion	1	-	Case report	2004
4	Maniar et al(4)	Manipur	1	Skin lesion	1	-	Case report	2005
5	Michael et al(5)	Mizoram(1), Assam(1), Nagaland(1)	3	Skin lesion, bone marrow	3	-	Case report	2005
6	Devi et al(6)	Imphal, Manipur	1	-	1	-	Case report	2007
7	Gupta et al(7)	Manipur	1	Lymph node	1	-	Case report	2007
8	Sharma et al(8)	Manipur	1	Skin lesion	1	-	Case report	2007
9	Annam et al(9)	Karnataka	1	Genital ulcer	1	-	Case report	2007
10	Gupta et al (10)	Himachal Pradesh	1	Nail clippings	0 (patient was immunocompetent)	0.77%	Observational study	2007
11	George et al(11)	Meghalaya	1	Duodenal biopsy	1	-	Case report	2008
12	Baradkar et al(12)	Maharashtra	1	Lymph node	1	-	Case report	2009
13	Saikia et al(13)	Nagaland	1	Skin lesion	1	-	Case report	2009
14	Adhikari et al (14)	Sikkim	4	Nail	NA	11.80%	Observational study	2009
15	Devi et al(15)	Manipur	27	NA	27	-	Comparative study	2009
16	Sood et al(16)	Mizoram	1	Skin lesion	1	-	Case report	2010
17	Saikia et al(17)	Assam	1	Skin lesion	1	-	Case report	2010
18	Saikia et al(18)	Assam	1	Skin lesion	1	-	Case report	2010
19	Peter et al(19)	North-eastern state	1	Chin ulcer (skin)	1		Case report	2010
20	Yanamandra et al(20)	Travel history to north-east India	1	Skin lesion	1	-	Case report	2011
21	Puri et al(21)	Assam (resident of Delhi migrated from Assam)	1	Skin lesion	1	-	Case report	2012
22	Dahiya et al(22)	Himachal Pradesh	1	Oral ulcer	1	-	Case report	2012
23	Gandham et al (23)	Pune, Maharastra	5 samples out of 336	Pus, skin, hair, nail	-	-	Observational study	2013
24	Kolalapudi et al(24)	Guntur, Andhra Pradesh	1	Skin	142	0.70%	Prospective study	2014
25	Ghalige et al(25)	Manipur	1	Lymph node	1	-	Case report	2014
26	Laishram et al(26)	Manipur	2	Lymph node	62	8.06%	Observational study	2014
27	Bordoloi et al (27)	Dibrugarh, Assam	2	Skin lesion	15	13.30%	Prospective	2015
28	Bachaspatimayum et al(28)	Manipur	1	Lymph node	1	-	Case report	2015
29	Kaur et al (29)	New Delhi	4	Induced sputum	280 (all)	1.43%	Prospective study	2016
30	Sunny et al(30)	Kerala	1	Nail	1	-	Case report	2018
31	Gorai et al(31)	Assam	1	Skin lesion	1	-	Case report	2019
32	Yadav et al(22)	New Delhi	1	Lymph node	1	-	Case report	2019
33	Sarkar et al(33)	Assam (1) Manipur(1)	2	Skin lesion	2	-	Case report	2019
34	Sethuraman et al (34)	Assam (4) Sikkim (1)	5	Lymph node, bone marrow, blood	3	-	Case report	2020

				lung biopsy				
35	Sridhar et al(35)	Aizawl, Mizoram	1	Duodenal biopsy, skin	1	-	Case report	2020
36	Laskar et al(36)	Assam	3	Skin lesion	3	-	Case report	2020
37	Gogia et al (37)	NA (Visit to Thailand)	1	Bone marrow	1	-	Case report	2021

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Ray A et al, Burden of serious fungal infections in India, Supplementary data 5

(The Studies marked in bold are the ones which have been used for computing fungal burden of India in this manuscript)

Contents:

Search outcomes and details of papers found for

1. **Cryptococcosis**
2. **Pneumocystis pneumonia**
3. **Tinea capitis**

1. Cryptococcosis

S. No	Author	Year of publication	Time period of estimation	Type of study	Region/city	Type of subjects	No of patients	Method of diagnosis	Prevalence/burden/frequency
1	Abrahamsen et al(1)	2013	July 2 2007- Aug 2 2007	Prospective observational	Tertiary care centre at Vellore, Tamil Nadu	100 patients with fever (temp > 38 deg C)	4 CM	-	4%
2	Agarwal et al(2)	2012	3 years, time period not mentioned	Prospective	Tertiary care centre at Lucknow, UP	39 consecutive patients (children & adults) with CNS fungal infections, admitted	28	Positive fungal culture in CSF or biopsy material	71.8 %
3	Ahuja et al(3)	2019	November 2017 to May 2019	Prospective observational	Tertiary care centre at New Delhi	102 adult (>14 y) HIV patients	10	Positive cryptococcal antigen latex agglutination test in blood	9.8 %
4	**Anuradha et al(4)**	**2017**		**Prospective observational**	**Tertiary care centre at New Delhi**	**128 ART naive adult PLHIV with CD4 < 100 cells/mm3**	**4**	**Serum Cryptococcal antigen Latex Agglutination Test**	**3.125 %**
5	Bagai et al(5)	2016	November 2014 to June 2016	Prospective observational	Tertiary care centre at Chandigarh	40 adult renal transplant patients with suspected fungal pneumonia/nocardiosis; admitted patients	3 pulm crypt	-	7.5 %
6	Baradkar et al(6)	2009	January 2006 to January 2007	Retrospective	Tertiary care centre in Mumbai, hospital based	573 adult HIV seropositive and clinically suspected cases of Cryptococcal meningitis	19 CM	CSF-negative staining with 10% Nigrosin, cultured on Sabouraud's dextrose agar, biochemical tests, such as urease test and brownish growth in Niger seed agar	2.79 %
7	Wadia et al(7)	2001	-	-	Tertiary care centre in Pune; OP & IP	457 HIV patients with neurologic manifestations	-	-	67.44 %
8	**Bhati et al(8)**	**2021**		**Prospective cohort**	**Tertiary care centre at Jodhpur**	**116 adult HIV patients with CD4 < 100**	**-**	**-**	**5.17 %**
9	Capoor et al(9)	2008	2005-2007	-	Tertiary care centre in Delhi	378 meningitis patients(acute & chronic), adult & children; admitted	35 (HIV-19 Immunocompetent- 16) C neoformans-32, C gatti-3	CSF India ink staining, fungal culture, CrAg LAT	9.3 %
10	Chacko et al(10)	1995	February 1986 to June 1992	Retrospective	Tertiary care centre at Vellore	61 HIV AIDS patients	4	-	7 %
11	Chakrabarti et al(11)	2008	Jan 1992- Dec 2005	Retrospective	Tertiary care centre in Chandigarh	113 patients with fungal endophthalmitis	1 crypto	-	
12	Chhina et al(12)	2014	Jan 2013- Dec 2013	-	Tertiary care centre in Ludhiana	747 samples from patients with chronic meningitis	14 CM	CSF India ink, fungal culture, CrAg LAT	1.9 %
13	Chander et al(13)	2014		-	Tertiary care centre at Chandigarh	23 clinically suspected	20	Culture in SDA	
14	Chander et al(14)	1994	1982-1991	Retrospective	Tertiary care centre at Chandigarh	38 clinical isolates of different cryptococcal species	24 cryptococcosis 14 colonizers	demonstration of encapsulated budding yeast cells in India ink smears and, when required, by Mayer's mucicarmine staining, culture and demonstration of cryptococcal antigen in the	

								serum and/or cerebrospinal fluid (CSF)	
15	Choudhari et al(15)	2016	March 2015 to May 2016	Prospective observational	-	80 adult patients admitted with meningoencephalitis	3 CM	-	3.75 %
16	Chugh et al(16)	1993	-	-	Tertiary care centre in Chandigarh	19 renal transplant patients with systemic fungal infections	8 CM	-	42 %
17	Chugh et al(17)	1994	July 1989 to June 1991	Prospective observational	Tertiary care centre at Chandigarh	157 renal transplant recipients	2 cutaneous crypto	HPR & culture from abscess	1.2 %
18	Das et al(18)	2015	January 2002 to December 2009	Retrospective	Tertiary care centre at Lucknow	69 adult renal transplant recipients with CNS complications (CNS infections in 47)	19 CM	CSF CrAg test & India ink staining	27.5 %
19	Das et al(19)	2017	Dec 2012 – Dec 2015	Prospective	Tertiary care centre at Delhi	153 suspected cases of meningitis; children & adult; admitted	19 CM (17 HIV, 2 non HIV)	India ink preparation, antigen detection, and culture	12.4 %
20	Dash et al(20)	2014	January 2010 to June 2012	Retrospective	Tertiary care centre at Odisha	112 clinically diagnosed adult CM patients; admitted	16 CM	CSF fungal culture after preliminary screening by microscopic examination, comprising of wet mount, Gram's staining and negative staining with 10% Nigrosin	14.3 %
21	Dharmshale et al(21)	2016	Apr 2010 to 2012	-	Tertiary care centre in western Maharashtra	150 clinically diagnosed adult CM patients; admitted	-	CSF microscopy, antigen detection, culture and PCR	
22	Dutta et al(22)	2020	January 2014 to July 2017	Longitudinal/cross sectional	Tertiary care centre in Kolkata; clinic based	390 ART naive HIV-seropositive adult patients with CD4 count ≤ 100 cells/µl,	49 CrAg positive	CrAg using both latex agglutination and lateral flow assay kits.	12.56 %
23	Elumalai et al(23)	2016	November 2008 to November 2015	-	Tertiary care centre in Chennai	26 renal transplant patients with systemic mycoses	1	-	3.8 %
24	Gandham et al(24)	2013	Jan 2010 to June 2012	-	Tertiary care centre in Pune	336 fungal isolates obtained from patients suspected of having fungal infections from various clinical departments	4 Crypt positive from CSF	Yeast identification was done on the basis of Indian ink preparation, germ tube production, sporulation on corn meal agar, urease production, sugar fermentation and assimilation and colour production on CHROM agar	1.19 %
25	Ghate et al(25)	2009	September 2002 and November 2004	Prospective	Tertiary care centre in Pune; clinic based	457 adult HIV patients	CM number NM	Clinical evidence of meningitis with demonstration of cryptococci in the CSF detected by India ink preparation	1.7 %
26	Gochhait et al(26)	2015	January 2011 to December 2013	Retrospective	Tertiary care centre in Chandigarh, lab based	66 cases of fungal infections	4 Cryptococcosis of LNs	FNAC , staining with May-Grunwald Giemsa, stain	6.06 %
27	Gulati et al(27)	2000	NM	Prospective	Tertiary care centre in Chandigarh, clinic based	21 consecutive adult renal transplant patients with clinically suspected pulmonary infections	1 pulmonary cryptococcosis	HRCT chest; Blood cultures revealed Cryptococcus neoformans	4.76 %
28	Gupta et al(28)	2020	-	Cross sectional	Tertiary care centre in Delhi; admitted patients	44 adult renal transplant recipients with invasive fungal infection	CM number NM	-	9 %
29	Gupta et al(29)	2018	November 2014 to	Cross sectional	Tertiary care centre	100 adult renal transplant	4 pulm crypt	-	4 %

			June 2017		in Chandigarh; admitted patients	patients with pneumonia			
30	Gupta et al(30)	2018	July 2016 to Dec 2017	Prospective observational	Tertiary care centre in Chandigarh; admitted patients	30 adult renal transplant patients with OIs	NM	-	1.7 %
31	Gupta et al(31)	2017	6 years study	Retrospective	Tertiary care centre in Delhi;	53 adult HIV patients with bone marrow infections	2 bone marrow Cryp	BM staining- GMS, mucicarmine	3.8 %
32	Indira et al(32)	2015	January 2011 to January 2012	Prospective	Tertiary care centre in Mangalore	74 adult PLHIV	13 CM (7 PLHIV with DM, 6 PLHIV without DM)	CSF India ink stain & culture	19% - PLHIV with DM 16% -PLHIV without DM
33	Jaiswal et al(33)	2002	1992-2001	-	Tertiary care centre in Indore	483 HIV adult & children	12 CM	CSF India ink stain & culture	2.48 %
34	Javali et al(34)	2017	Nov 2010- April 2014	Prospective	Tertiary care centre in	110 patients with clinically diagnosed CNS infections	3 CM	CSF India ink stain & culture, CrAg, SES-multiplex PCR	
35	**Kadam et al(35)**	**2017**	**-**	**Prospective**	**Tertiary care centre in Pune**	**208 AIDS patients > 18 years with CD4 cells <100 cells/mm3**	**16 cryptococcemia 3 CM**	**CrAg f/b CSF**	**8 % cryptococcemia 1.44 % CM**
36	Kamana et al(36)	2010		Cross sectional	Tertiary care centre in Chandigarh	300 FNAC samples from HIV patients > 13 yrs old	4 Crypt LNs	FNAC LN, special stains	
37	Kashyap et al(37)	2012	April 2009 to April 2010	Retrospective	Tertiary care centre in Delhi	2,228 samples from various infections suspected of fungal etiology	4 CM	CSF culture	0.6 %
38	Kaur et al(38)	2016	-	Prospective	Tertiary care centre in Delhi	215 fungal isolates from 280 HIV patients of all age groups; admitted and OPD patients	6 CM 1 Pulm Crypt	India ink stain, culture	3.3 %
39	Kaur et al(39)	2017	October 2008 to September 2011	Prospective cross sectional	Tertiary care centre in Delhi	71 HIV patients	2 pulm crypto	Sputum India ink, culture	2.8 %
40	Khan et al(40)	1996	February 1991 to February 1994	Prospective observational	Tertiary care centre in Lucknow, admitted patients	100 adults- HIV & non-HIV	10 cryptococcemia (6 HIV, 4 non HIV)	CrAg LAT	10 %
41	Kolalapudi & Guttikonda(41)	2014	2 years	Prospective observational	Tertiary care centre in Guntur AP	142 adult HIV	5 cut crypto	Confirmation of the diagnoses of fungal infections was done by KOH smears, cultures and histopathology	3.52 %
42	**Kumar et al(42)**	**2021**	**November 2018 and November 2019**	**Prospective observational**	**Tertiary care centre in Chandigarh; admitted patients**	**401 consecutive patients ≥ 12 yrs with CNS infections**	**25 CM 21 in HIV**	**rapid detection of cryptococcal antigen in CSF using a semi-quantitative immunochromatographic test (Biosynex CryptoPS, Strasbourg, France) was done**	6.2 % 47.7 % in HIV HIV assoc CM- 54.34%
43	Naik et al(43)	2017	2001 to 2014	Retrospective	Tertiary care centre in Belagavi, Karnataka; admitted patients	97 patients with CM	88 HIV positive	Detection of cryptococci by at least one of the following methods which included India Ink preparation, culture positivity, or antigen positivity	90.7 % HIV related CM
44	Kumar & Jyothi(44)	2014	-	-	Tertiary care centre in Bengaluru	10226 CSF samples from patients with meningitis,	281 positive for cryptococci	CSF India ink, fungal culture, CrAg LAT	2.75 %

						immunocomromised & immunocompetent	(228-immunocompromised 17-immunocompetent 36-unknown immune status)		
45	Kumarasamy et al(45)	2003	June 1996 to June 2001	Retrospective	Tertiary care centre in Chennai	594 adult HIV patients	28 CM	Specific opportunistic infections were diagnosed on the basis of standard clinical definitions and by laboratory procedures	4.7 %
46	Lahiri Mukhopadhyay(46)	2017	January 2012 to December 2015	Prospective	Tertiary care centre in Bengaluru	199 CNS cryptococcosis (HIV +ve & -ve)	179 C neoformans 20 *C. gatti*	CSF India ink, fungal culture, CrAg LAT PCR for species identification	10 % C gatti among all CNS cryptococcosis
47	Lahiri et al(47)	2020	-	-	Tertiary care centre in Bengaluru	160 CNS cryptococcosis-adult & children (HIV +ve & -ve)	-	CSF CrAg LAT, culture; *C. neoformans and C. gattii* differentiated by chemotyping on Canavanine Glycine-Bromothymol blue (CGB) media, which turns into blue in presence of *C. gattii* species complex & PCR	80% *C. neoformans* VNI, 8.75% VNII 22.5% *C. gattii* (VGI), 8.75% *C. tetragattii* (VGIV)
48	Lakshmi et al(48)	2007	-	Retrospective	Admitted patients	1863 HIV	-	-	2.09 %
49	Lanjewar et al(49)	2004	1988-2002	Retrospective & prospective	Tertiary care centre in Mumbai	Autopsy & biopsy specimens from 171 adult HIV patients	8 cryptococcosis	HPR & special staining	5 %
50	Mahale et al(50)	2012	December 2007 – December 2008	Prospective	Tertiary care centre in Bellary, Karnataka	242 CSF samples of clinically suspected CM immunocompromised & immunocompetent	20 CM	Identification was based on direct microscopy, culture and biochemical reactions by conventional methods	8.3 %
51	Manoharan et al(51)	2001	3 years	-	Tertiary care centre in Perundurai, Tamil Nadu	CSF samples from 89 HIV	31 CM	-	34.8 %
52	Mathur et al(52)	2010	1999-2000(pre ART era) & 2005-2007 (post ART era)	Retrospective & prospective	Tertiary care centre in Jabalpur	Needle necropsy/autopsy from 68 HIV	10 diss crypto	-	14.7 %_
53	Medisetty et al(53)	2017	March 1 2010 to March 2017	Prospective cohort	Three private hospitals in Pune	785 HIV patients with CD4 <200	53 cryptococcal antigenemia	Serum cryptococcal antigen	6.75%
54	Mohanty et al(54)	2019	July-Dec 2018	Cross sectional	Tertiary care centre in Rishikesh	CSF samples from 364 patients	4 CM	CSF India ink stain, culture SDA, MALDI TOF	1.09 %
55	**Munivenkataswamy et al(55)**	**2013**	**May 2010 to April 2011,**	**Prospective**	**Tertiary care centre in Bengaluru; hospital & ART clinic based**	**66 adult HIV patients with suspected meningoencephalitis** **42 have CD4 < 200**	**12 CM** **All in CD4 < 200**	**Cryptococcal isolates identified by microscopy, the cultural characteristics, melanin production on Niger Seed agar, urea hydrolysis, the Nitrate assimilation test and by capsular antigen detection by latex agglutination. Biotyped by using**	**18.2 %**

								Canavanine-Glycine-Bromothymol blue agar	
56	Nagarathna et al(56)	2010	6 years 4 months	-	Tertiary care centre in Bengaluru;	418 clinically suspected cases of Cryptococcal meningitis	12 (2.8%) were var gattii and 406 were either var neoformans/grubii	Ability of pathogenic strain to produce melanin on caffeic acid agar medium, urease production and growth at 37°C. Exclusive ability of C. gattii to utilize l-canavanine and assimilate glycine as the sole carbon source, on an improved diagnostic l-canavanine glycine bromothymol blue (CGB) agar	2.8 % *C gatti*
57	Nigam et al(57)	2012	March 2009 to February 2010	Prospective	Tertiary care centre in Varanasi	132 consecutive, non-repetitive CSF samples from HIV infected patients with a clinical diagnosis of chronic meningitis	17 CM	CSF India ink, culture, CrAg LAT	12.9 %
58	Onkarappa et al(58)	2020	2001-2014	Retrospective	Tertiary care centre in Belagawi, Karnataka	167 patients with HIV and AIDS ≥ 16 yrs age with meningoencephalitis	88 CM	CSF India ink, fungal culture	52.7 %
59	Prasad et al(59)	2003	Five & half years	Retrospective	Tertiary care centre in Lucknow	326 meningitis cases immunocompetent & immunocompromised adults	54 CM	CSF India ink, culture, CrAg LAT	16.6 %
60	Sachdeva et al(60)	2012	January 2002-March 2011	Retrospective	Tertiary care centre in Chandigarh; clinic based	6900 HIV	91 CM 74 had CD4 < 100	-	1.32 %
61	Shakhuja et al(61)	2001	July 1980- Dec 1999	Retrospective case record based	Tertiary care centre in Chandigarh	79 renal allograft recipients with CNS dysfunction	12 CM	-	15.1 %
62	Saldanha et al(62)	2008	July 2004 to July 2005	Prospective	Tertiary care centre in Mangalore; microbiology dept	307 HIV	25 CM	CSF India ink, SDA culture	8.2 %
63	Sanadhya et al(63)	2014	January 2012 to December 2012.	Cross-sectional analytical study	Tertiary care centre in Rajasthan; clinic based	232 adult HIV	23	Clinical features of meningitis/meningoencephalitis along with positive cerebrospinal fluid (CSF) cryptococcal antigen test or positive CSF India ink preparation or isolation of cryptococcus neoformans in the CSF culture	9.9 %
64	Satishchandra et al(64)	2000	1989-1996	-	Tertiary care centre in Bengaluru	80 HIV patient with neurologic OIs	37 CM	-	46.3%
65	Satpute et al(65)	2006	1996-2005	Retrospective	Tertiary care centre in Pune	2037 samples (CSF & blood) from 1922 clinically suspected CM cases (HIV & non HIV)	340 (CSF-290, blood-50) All C neoformans 252 out of 475 HIV	Positive cerebrospinal fluid (CSF) India ink staining or a positive culture for the organisms, in addition to a positive cryptococcal antigen latex agglutination test (CALAS; Meridian Diagnostics)	17 % 53.1 % in HIV
66	Seetha et al(66)	1999	-	-	Tertiary care centre in Mangalore	1170 CSF samples from clinically diagnosed meningitis cases (children &	8 CM	CSF microscopy, culture)	-

						adults)			
67	Sethi et al(67)	2012	March 2008 to March 2010	-	Tertiary care centre in Delhi, admitted patients	50 consecutive cases of central nervous system (CNS) fungal infections (immunocompromised & immunocompetent)	17 CM	Combination of clinical presentation, laboratory results, neuroimaging studies and pathology when available	34 %
68	Sharma et al(68)	2017	August 2008 to September 2014	Retrospective observational	Tertiary care centre in North Eastern India, admitted patients	91 HIV seropositive patients aged >18 years, showing clinical evidence of central nervous system (CNS) involvement	13 CM	CSF India ink and cryptococcal antigen test	14.2 %
69	Shekar et al(69)	2019	1996-2016	Retrospective	Tertiary care centre in Bengaluru	67 renal transplant patient with invasive fungal infections	3 CM	-	4.5 %
70	Singh et al(70)	2011	1 January 2006 to 31 December 2009	Prospective	Tertiary care centre in Bhathinda	416 HIV > 18 years old	-	-	6.01 %
71	Sridhar & Krishnasagar(71)	2018	Jan 2012 to May 2016	Cross sectional, observational	Tertiary care centre in Guntur	116 HIV patients with meningitis	6 CM	-	
72	Thakur et al(72)	2008	NM	NM	Tertiary care centre in Delhi; admitted	104 patients (children & adults)with meningitis/meningoencephalitis (13 HIV & 91non HIV)	6 CM All in HIV	CSF India ink stain, fungal culture & CrAg LAT	46% in HIV
73	Vijay et al(73)	2019	Jan 2015- Dec 2015	Cross sectional	Tertiary care centre in Mumbai	150 HIV patients with CD4 ≤100	4 cryptococcemia	Blood India ink, fungal culture, CrAg LFA	2.67 %
74	Wadhwa et al(74)	2007	February 2005 to April 2006	Prospective	Tertiary care centre in Delhi; OP & IP patients	60 adult HIV patients with suspected fungal infections	6 crypococcosis (CM-4 Pulm Cryp-2 Both-1) CD4 < 100 in 3	CSF, sputum India ink stain, fungal culture & CrAg LAT	10 %
75	Wadhwa et al(75)	2008	April 2005 to April 2006	Prospective	Tertiary care centre in Delhi	17 HIV patients with chronic meningitis	5 CM	CSF Gram stain, India ink stain, fungal culture & CrAg LAT	29.4 %

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2. Pneumocystis pneumonia

Sl no	Author(s)	Year of publication	Time period of estimation	Type of study	Region/city	Type of subjects	No of patients	Method of diagnosis	Prevalence/burden/frequency
1	Aishwarya et al(1)	2020	2013 to 2016	Retrospective case record based	Tertiary care hospital in Manipal, coastal Karnataka	298 adult (>18 years) HIV, admitted patients	35	-	11.7 %
2	Arora and Kumar(2)	1999	February 1991 to October 1997	Prospective	-	190 HIV	-	-	Abstract only
3	Bagai et al(3)	2016	November 2014 to June 2016	Prospective	PGIMER, Tertiary care centre in Chandigarh	40 adult renal transplant patients with suspected fungal pneumonia/nocardiosis; admitted patients	12	-	30 %
4	Das et al(4)	2014	January 2010 to October 2011	Cross sectional	Tertiary care hospital in Delhi	94 immunocompromized children < 15 years with acute LRTI; admitted patients	14 (6/14 HIV; 4/9 renal disease on immunosuppressants; 2/11 PIDs; 2/57 malignancies on chemo)	Induced sputum subjected to Gomori methenamine silver stain [and major surface glycoprotein (MSG)-PCR assay	15% (HIV-43% Renal disease on immunosuppressants-45% PIDs-19% Malignancy-3.5%)
5	Farhan et al(5)	2017	2010 to 2016	Retrospective	Tertiary care hospital in Mangalore, Karnataka	73 adult HIV patients who died in the hospital b/w 2010 & 2016	17	Not mentioned	23.3 %
6	Gautam et al(6)	2009	February to November 2006	Cross sectional	ART clinic of tertiary care centre in Delhi	31 adult HIV positive with respiratory symptoms	14	Direct immunoflorescence staining using a MeriFluor-Pneumocystis kit in sputum	45.2 %
7	Gireesh et al(7)	2019	2017 to 2019	Prospective	Tertiary care centre in Chennai	14 adult patients with pulmonary infections who were taking anti TNF for IBD	1	CT chest & BAL fluid PCR	7.1 %

8	Giri et al(8)	1995	1986 to 1983	Retrospective	Tertiary care centre in Delhi	134 adults & children with HIV	-	-	Abstract only
9	Gupta et al(9)	2020	-	-	Nephrology department of a tertiary care centre in New Delhi	342 adult renal transplant patients; admitted patients	4	-	Abstract only
10	Gupta et al(10)	2011	January 2005 to October 2008	Observational	IRCH; Tertiary health centre in Delhi	323 adult & pediatric immunocompromised patients OP & IP patients	50 (HIV- 22 Non-HIV-28)	PCR R at the mt LSU rRNA gene	15.5 %
11	Indira et al(11)	2015	January 2011 to January 2012	Prospective	Tertiary care hospital in Mangalore	74 adult PLHIV	9 (2/37 with DM & 7/37 without DM)	Not mentioned	5%- PLHIV with DM 18%- PLHIV without DM
12	Jayaprakash et al(12)	2012	-	-	Tertiary care centre, admitted	70 patients with non resolving pneumonia	-	Abstract only	7.1 %

13	Jha et al(13)	1999	June 1990 to May 1998	Retrospective	-	27 renal transplant patients with pneumonia	2	Abstract only	7.4 %
14	Jha et al(14)	1999	July 1994 to January 1996	Prospective	Tertiary care centre, Chandigarh	39 episodes of pulm infections in 34 adult renal transplant patients	6 episodes of PCP	Identifying trophozoites by Wright Giemsa stain or cysts by methenamine silver or calcofluor plus stains	7.4 %
15	Kaur et al(15)	2017	October 2008 to September 2011	Prospective, cross sectional	2 tertiary care centres in Delhi	71 adult HIV patients with pneumonia; admitted & out patients	14	Direct IF of sputum samples	19.7 %
16	Kaur et al(16)	2016	January 2012 to December 2013	Retrospective	Tertiary care institute in North India; hospital based	45 children & adult patients with HIV & unknown HIV status	20 (9/26 HIV, 11/19 HIV unknown status)	Expectorated and induced sputum smears -direct fluorescent antibody (DFA) stain using a commercially available kit (MERIFLUOR ® Pneumocystis - Meridian Bioscience, Inc., Italy)	44.4 %

17	Kaur et al(17)	2015	Not mentioned	Cross sectional	Tertiary care centre,	125 HIV patients with resp symptoms clinic based	34	IFAT, GMSS, Giemsa & Toluidine blue O staining of sputum samples	27.2 %
18	Kothari & Goyal(18)	2001	September 1996 to December 1997	Cross sectional	Tertiary care centre in Jaipur	25 adult HIV admitted patients	-	Abstract only	10 %
19	Kumar & Khuranna(19)	1998	January 1990 to January 1997	Prospective	Tertiary care centre in Manipur, clinic based	81 pregnant HIV women with thalassemia	5	Not mentioned	6.2 %
20	Kumar et al(20)	1997	February 1992 to February 1996	Prospective	Tertiary care centre in Manipur	160 pregnant HIV	9	Not mentioned	5.6 %

21	Kumarasamy et al(21)	2003	June 1996 to June 2001	Retrospective	Tertiary HIV care centre in south India;	594 adult (>18 years) HIV Clinic & hospital based	36	Not mentioned	6.1 %
22	Kumarasamy et al(22)	2010	February 1996 to January 2008	Retrospective	Tertiary HIV care centre in south India; Hospital based	-	_ Out of 69 HIV deaths	Not mentioned	22 %
23	Mahajan et al(23)	2016	February 2015 to July 2015	Prospectively	Dept of renal transplant surgery, PGIMER Chandigarh	25 renal transplant patients with pneumonia	1 Admitted patients	-	Abstract only
24	Mane et al(24)	2015	Not mentioned	Prospective cross sectional	Tertiary care hospital in Pune	111 adult HIV Admitted patients	14	The BAL samples were processed for the identification of P. jiroveci by the Grocott's Gomori methenamine silver (GMS) stain using the Accustain kit (Sigma, Steinheim, Germany) as per the manufacturer's instructions and polymerase chain reaction (PCR) using the pAZ102-E and pAZ102-H primers targeting the mitochondrial large-subunit rRNA gene	12.6 %

25	Mangalgi et al(25)	2021	2015 to 2017	Prospective	Nephrology department of a tertiary care hospital in New Delhi	88 adult (age ≥18 years) renal transplant recipients with a pulmonary infection	11 out of 102 pulm infections	PCR testing of BAL fluid or lung biopsy	12.5 % 10.8 % ?
26	Merchant et al(26)	2001	August 1994 to	Prospective	HIV clinic at a pediatric tertiary care centre; Clinic based	213 HIV children < 5 years	11	Pneumocystis carinii pneumonia (PCP) was diagnosed by X-ray evidence of bilateral diffuse alveolar disease and confirmed on bronchoalveolar lavage	3.88 %
27	Mishra et al(27)	2006	June 1999 to May 2005	Prospective	Not mentioned	1101 HIV presumed to be having PCP	279	Staining of sputum with GMS, Toluidine blue & Giemsa	25.34 %
28	Nair et el(28)	2020	2006 to 2018	Prospective	Tertiary care hospital in Kochi, Kerala, admitted	576 adult HIV	21 All had CD4 < 200	Not mentioned	3.64 %

29	Nayak et al(29)	2013	January 2008 to December 2010	Retrospective record based	Tertiary care centre in north Karnataka	361 expired HIV patients (children & adults)	25	Not mentioned	6.9 %
30	Rajasekaran et al(30)	2009	2002 to 2004	Retrospective	Referral hospital at Chennai; clinic based	1768 children with HIV	268	Pneumocystis carinii pneumonia was diagnosed predominantly on clinical presentation of progressive dyspnoea, tachypnoea disproportionate to chest skiagram findings, low oxygen saturation	15.2 %
31	Sanadhya et al(31)	2014	January 2012 to December 2012	Cross sectional analytical	Tertiary care centre in Rajasthan; out patients	232 adult HIV	11	Bilateral, diffuse interstitial infiltrates on chest radiograph or high-resolution CT, with hypoxemia (PaO_2 < 12 kPa) and sputum smears/ /cultures negative for aerobic bacteria and acid-fast bacilli and/or demonstration of pneumocystis jiroveci in induced sputum	4.7 %
32	Sen et al(32)	1993	Not mentioned	Prospective	Tertiary care centre in Delhi;	18 thalassemia children with HIV clinic based	1	Not mentioned	5.6 %
33	Shah(33)	2005	December 1996 to December 2003	Retrospective & prospective	Pediatric and Perinatal HIV clinic in a tertiary pediatric hospital in Mumbai	317 children (<12 years) with HIV Clinic based	7	Clinical findings of dyspnea, fever, X-Ray evidence of bilateral diffuse alveolar infiltrates and confirmed by bronchoalveolar lavage or gastric lavage	2.2 %
34	Shah et al(34)	2005	January 2000 to October 2001	Prospective	Tertiary care referral teaching hospital in Mumbai	42 children(<12 years) with HIV	4	Not mentioned	9.52 %
35	Sharma et al(35)	2004	January 2000 to July 2003	Observational	Tertiary care hospital in north India	135 HIV ≥ 13 years age	10	bilateral, diffuse interstitial infiltrates on chest radiograph	7.4 %

								or high-resolution CT, with hypoxaemia (PaO2 <12 kPa) and sputum smears/cultures negative for aerobic bacteria and AFB and/or demonstration of Pneumocystis jiroveci in induced sputum	
36	Singh et al(36)	2015	? not mentioned	Prospective	Tertiary care health center in New Delhi, India	180 immunocompromised adults & children	18	Detection of P. jirovecii was performed using Gomori methenamine silver staining (GMS) and nested polymerase chain reaction (PCR) assay targeting the mitochondrial large subunit ribosomal RNA (mt LSU rRNA) gene	10 %
37	Singh et al(37)	2013	17 months period	Prospective observational	Tertiary care centre in Ludhiana	75 adult HIV patients admitted patients	4	sputum for pneumocystis jiroveci cyst,radiology	5.3 %
38	Singh et al(38)	2017	January 2014 to January 2017	Prospective	Tertiary care centre, Delhi; admitted patients	300 HIV & non HIV immunocompromised children& adult patients with clinically diagnosed PCP	31	Molecular detection of P. jirovecii infection was carried out by amplification of the P. jirovecii-specific mtLSU rRNA gene using a nested PCR assay	10.3 %
39	Singh et al(39)	2019	March 2014 to March 2017	Prospective	Tertiary care centre in Delhi	76 adult HIV patients with high clinical suspicion of PCP; Admitted patients	17	Clinical samples were processed for detection of P. jirovecii using both microscopy (Grocott–Gomori's methenamine silver staining) and nested PCR (nPCR) targeting the mitochondrial large subunit rRNA of P. jirovecii	22.4 %
40	Tyagi et al(40)	2010	2006 to 2009	Prospective	Tertiary care centre in Delhi	147 adult (>13 years) HIV patients with clinically suspected PCP	16	Detection and identification of P. jirovecii was done using direct	10.8 %

								fluorescent antibody staining (DFA) using a commercial kit (Meriflour, Cincinnati, USA) and Grocott's-Gomori methenamine silver (GMS) staining as well as by amplification of the major surface glycoprotein (MSG) gene by conventional polymerase chain reaction (PCR)	
41	**Udwadia et al(41)**	**2005**	**2000 to 2003**	**Prospective**	**Tertiary referral centre in Mumbai**	**300 adult HIV; admitted patients**	**38**	**All PCP diagnosis was performed by a single cytologist using an indirect immuno fluorescence staining technique on sputum or BAL.**	**13% of all HIV 32% of all pulmonary admissions**

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3. Tinea capitis

S. No.	Author(s)	Year of publication	Time period of estimation	Type of study	Type of patients	Region/ City	No of patients	Method of diagnosis	Prevalence /Burden/ Frequency
1	Singh et al(1)	2003	1999-2000	-	Patients with Dermatophytosis of age group	Baroda	18 tinea capitis out of 260 cases of dermatophytosis	KOH mount and SDA culture	6.9% of all dermatophytosis
2	**Kundu et al(2)**	**2012**	**-**	**Cross sectional**	**School going urban children aged 6–14 yrs**	**Kolkata**	**52 had tinea capitis out of 505 students**	**Potassium hydroxide studies of hair samples from suspected cases of *Tinea capitis* as per standard procedure**	**10% of all school going children**
3	**Kalla et al(3)**	**1995**	**1993-94**	**-**	**Patients of all age group with superficial mycoses**	**Jodhpur**	**200 tinea capitis among 4510 cases of superficial mycoses**	**KOH mount and SDA culture**	**4.4% of all dermatophytosis**
4	**Kumar et al(4)**	**1996**	**May 1992 to April 1994**	**-**	**All age group**	**Delhi**	**72 Patients with tinea capitis**	**-**	**Children were 94% among all Tinea capitis cases**
5	**Reddy et al(5)**	**2016**	**October 2015 to May 2016**	**-**	**All age group**	**Hyderabad**	**100 patients with tinea capitis among 708 dermatophytosis**	**Direct microscopic examination (10% KOH) and culture on Sabouraud dextrose agar medium**	**14% of all dermatophytosis Children were 93% among all Tinea capitis cases**
6	**Shukla et al(6)**	**2019**	**September 2011 to August 2012**	**-**	**Children aged 2-12 years**	**Ranchi**	**160 untreated cases of tinea capitis**	**KOH mount**	**67% were from lower socioeconomic class**
7	**Kalita et al(7)**	**2019**	**January 2017 to May 2018**	**Retrospective**	**All age group**	**Jodhpur**	**3 cases of tinea capitis (out of 160 culture positive dermatophytosis)**	**KOH mount and SDA culture of skin, hair and nail samples**	**2% of all culture positive dermatophytosis**
8	**Penmetcha et al(8)**	**2016**	**2014-15**	**-**	**All age group**	**Guntur**	**5 cases of tinea capitis among 125 dermatophytosis**	**KOH mount and SDA culture**	**4% of all dermatophytosis**

9	**Singal et al(9)**	**2001**	**January 1997 to July 1997**	**Prospective**	**Patients with tinea capitis among all age group**	**Delhi**	**153 consecutive patients with tinea capitis**	**skin scrapings and hair samples were subjected to culture on Saboraud's dextrose agar medium containing streptomycin, chloramphenicol, gentamicin, and cycloheximide**	**Children were 90% among all Tinea capitis cases 75% were from lower socioeconomic class and 20% from lower middle socioeconomic class**
10	Hajini et al(10)	1970	-	-	Primary school children	North India	16 cases of tinea capitis out of 1930 patients with dermatomycoses	KOH mount and culture	0.8% of all primary school going children
11	**Kamalam et al(11)**	**1980**	**November 1973 to October 1976**	**-**	**All age group**	**Madras**	**723 cases of tinea capitis**	**KOH mount and SDA culture of scales, pus and hair samples from suspected cases of Tinea capitis**	**5% of all dermatophytosis**
12	Pandey et al(12)	2013	2010-11	-	Suspected Dermatophytosis among Cancer patients	Gwalior	18 tinea capitis out of 71 cases of dermatophytosis	KOH mount, SDA culture	25.3 % of all dermatophytosis among cancer patients
13	**Ramaraj et al(13)**	**2016**	**April 2011-March 2014**	**-**	**Patients of all age groups showing lesions specific of dermatophyte infection**	**Chennai**	**6 cases of tinea capitis out of 210 dermatophytoses**	**KOH mount, SDA culture and PCR-RFLP**	**2.86 %**

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