Global research trend on yellow fungus: A scientometric analysis

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Abstract

The purpose of this study was to look at the present research on yellow fungus. A growing number of academic publications in this area fuels interest in this subject. However, there still needs to be more quantitative data on this subject. The primary goal of this study was to compile research on the yellow fungus published in Web of Science-indexed publications between 1916 and June 6, 2021. The scientometric technique, a quantitative analysis of publication patterns, was employed for this research. The findings revealed a steady rise in research, with a significant increase beginning in 1991. A total of 2704 papers were published in 1056 journals, with an average of 22.36 percent citations per document. The highly cited papers were mostly found in WoS databases in Q1 category journals. Most of the published collaborative papers came from the United States, America, China, and other affluent countries; several developing countries also contributed. The pattern of authorship revealed an interdisciplinary and collaborative approach among scholars.

Multiple Correspondence Analysis Conceptual Structure: Map-methods of Author's Keyword This scientometric study may help academics and funding organisations and policymakers worldwide.

Keywords: *Yellow Fungus, Mycotaxon, Disease, Mapping Review, Scientometric; WoS.*

INTRODUCTION

The coronavirus pandemic's second wave has yet to pass. Fungal pathogens are becoming more common among COVID-19 patients and those who have survived therefrom them. NDTV spoke to experts about the recent reports of "yellow fungus' in Uttar Pradesh (Sunil Prabhu, 2021). Mucormycosis is a fungal disease (Sivankalai, S; Sivasekaran, K 2021). when fungal infections affect the neck, face, eye, and brain orbits, causing the tissues to become black, the so-called "black fungus" (Tedder, M., Et al. 1994). If mushrooms assault private areas, the discharge is white, hence, the name of the white mushroom. Now people call it "yellow fungus' because the yellow pus is produced in the region injured by the fungus (Harman, J. E. 1983).

What is more essential is to manage the components behind these illnesses based on the colour of the discharge or the appearance of the body part. In most instances, the high amount of glucose in patients may place them in great danger of fungal attacks (Sivankalai, S and Sivasekaran, K 2021). Dr Randeep, the Director of the All-India Institute of Medical Sciences, was responsible for the rise of black fungus throughout the country Guleria (Guleria, R., & Srivastava, D. N. 2020). Black fungus induces chest discomfort, facial pain, toothache, nasal discolouration, respiratory pain, and chest pain (Guleria, R. 2020).

Research methods

For 107 years, between June 6, 1916, and 2021, the data for this research were collected in the Web of Science (WoS) database of clarivate analytics. The analysis was limited to research papers in terms of academic productivity. The advance search option was used. Only "yellow fungus" without limited periods was chosen for the required results. To obtain the findings and conclusions, data were saved in plain text files. Biblioshiny tools used for annual production software, annual quotations, authorship through the Law of the Author, source impact, funding agencies, and prolific affiliations preferred for publications have refined, analysed, and inferred the data. The data has been published.

Figure 1 reveals that the annual production of yellow fungus from 1995 to 2020 was 2,695 in each year and 0.1 percent. The number of articles produced for yellow fungus in 2020 was 193 (7.16%), which got first place, and the lowest production of articles from 1988 to 1916 was equally distributed on 1 (0.4%), which got last place in production for yellow fungus. The minimal production of articles on yellow fungus from 2018 to 2019 was the same as 172 (6.38%), which is an exponential production of yellow fungus. However, the growth of production was 165 (6.12%) and steadily increased with the production of yellow fungus in 2014, which was 135 (5.01%), whereas the growth of articles produced was 138 (5.12%) in 2017 and 137 (4.86%) in 2015.Respectively, on publication of the articles related to yellow fungus, a maximum of 2695 was obtained in the above figure.

Figure 1 Annual Production of Yellow fungus

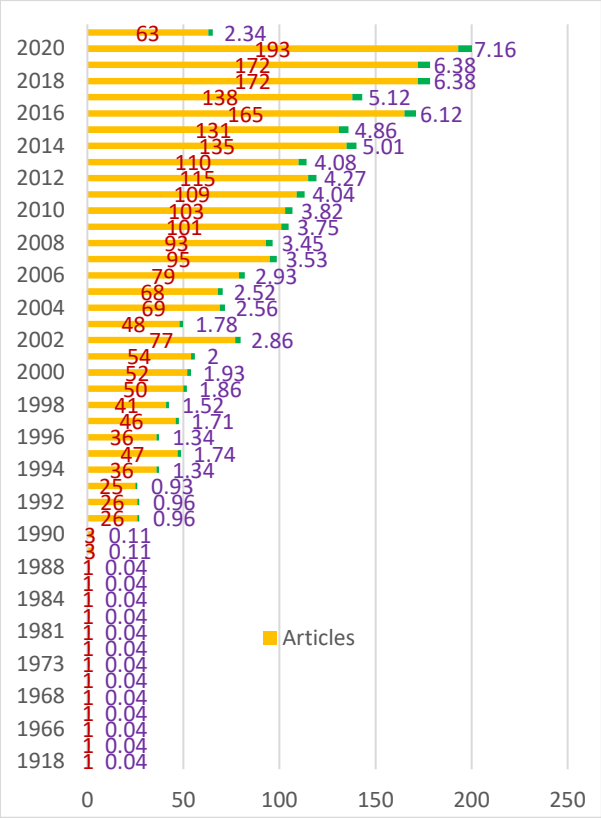


Table 1 Total Annual Citation on Yellow Fungus

Year	N	Mean TC perArt	Mean TC per Year	Citable Years
1916	1	6.00	0.06	105
1918	1	8.00	0.08	103
1960	1	32.00	0.52	61
1966	1	15.00	0.27	55
1967	1	8.00	0.15	54
1968	1	0.00	0.00	53
1970	1	14.00	0.27	51
1973	1	75.00	1.56	48
1977	1	46.00	1.05	44
1981	1	4.00	0.10	40
1983	1	35.00	0.92	38
1984	1	3.00	0.08	37
1986	1	12.00	0.34	35
1988	1	50.00	1.52	33
1989	3	29.67	0.93	32
1990	3	1.00	0.03	31
1991	26	20.38	0.68	30
1992	26	44.00	1.52	29
1993	25	43.12	1.54	28
1994	36	27.47	1.02	27
1995	47	39.17	1.51	26
1996	36	34.81	1.39	25
1997	46	34.24	1.43	24
Year	**N**	**Mean TC perArt**	**Mean TC per Year**	**Citable Years**
1998	41	24.34	1.06	23
1999	50	50.56	2.30	22
2000	52	29.29	1.39	21
2001	54	38.09	1.90	20
2002	77	37.30	1.96	19
2003	48	53.79	2.99	18
2004	69	38.86	2.29	17
2005	68	32.46	2.03	16
2006	79	38.00	2.53	15
2007	95	33.99	2.43	14
2008	93	37.84	2.91	13
2009	101	31.06	2.59	12
2010	103	27.54	2.50	11
2011	109	31.45	3.14	10
2012	115	24.66	2.74	9
2013	110	18.05	2.26	8
2014	135	18.61	2.66	7
2015	131	15.39	2.56	6
2016	165	11.27	2.25	5
2017	138	8.88	2.22	4
2018	172	8.96	2.99	3
2019	172	4.26	2.13	2
2020	193	1.73	1.73	1
2021	63	0.19		

The researcher has determined from Table 1 that the total annual citations per year on yellow fungus were obtained from all of the above in the Web of Science or Medline databases. The data captured the first position for the highest mean value, 193 (1.73), and in 2018, the total

citations' mean value was 172 (8.96), earning the table's second position. However, in the year 1916, the total citation mean was very low, at 1 (6.00), and in the year 1918, the total citation mean value was 1 (8.00). Subsequently, for the years 1960, 1966, 1967–1968, 1970, 1973, and 1977, the total lower citation mean is 1 (00, respectively, as shown in the above table, and the total citation mean is 2695 (57.3%).

Table 2 shows that 577 scholars wrote 300 journal articles about yellow fungus between 1994 and 2014. The researchers were then rated based on their most recent papers in the yellow fungus study. The first twenty writers have been recognized as this study's prolific contributors. The author "Strack" has 1659 articles on yellow fungus research with an h index of 15, a g-index of 15, and an m index of 0.68, and it ranks first. The author "Oehl" has 432 publications with an h-index of 14, a g-index of 19, and an m-index of 0.70, and it ranks second. The writer's "Cui" have published 346 publications with an h-index of 13, a g-index of 18, and an m-index of 0.81 value, while the authors "Blaszwkowski" have published 336 publications with an h-index of 13, a g-index of 17, and an m-index of 0.46 value. The remaining writers have published publishing values for suitable locations throughout the investigation.

Table 2 Author Impacts on Yellow fungus

Author	h index	g index	m index	TC	NP	PY start
Oehl F	14	19	0.70	432	31	2002
Blaszkowski J	13	17	0.46	336	22	1994
DA Silva GA	11	15	0.92	244	20	2010
Hovmoller MS	14	19	0.70	1196	19	2002
Cui BK	13	18	0.81	346	18	2006
Justesen AF	12	17	0.60	919	17	2002
Dai YC	10	15	0.53	386	15	2003
Strack D	15	15	0.68	1659	15	2000
Briggs CJ	11	13	0.65	1183	13	2005
Maia LC	8	12	0.40	157	13	2002
Panaccione DG	8	13	0.67	259	13	2010
Ali S	9	12	1.13	458	12	2014
Asgher M	7	12	0.44	249	12	2006
Kang ZS	8	12	0.53	327	12	2007
Liu Y	6	11	0.30	135	12	2002
Zhao J	6	12	0.22	159	12	1995
Bruckart WL	6	8	0.23	65	11	1996
Chen XM	7	11	0.64	302	11	2011
Cloyd RA	5	7	0.26	60	11	2003
DE Vallavieille-Pope C	11	11	0.55	577	11	2002

Figure 2 indicated that (a) hierarchy-wise displayed the sources of mycotaxon, mycologia, and plant disease articles. (b) Oehl F, Blaszkowski J, and Da Silva GA These authors contributed to the top three positions in the field of yellow fungus. (c) overall published articles During the period, affiliations were heavily involved in the fields of yellow fungus, followed by Beijing Forestry University, the University of California, Davis, and Washington State University.Concept maps assist in emphasising connections and patterns in data, which can aid with quantitative and qualitative analysis. Concept maps may aid in analysing interview data and propose additional applications for them in research interviews. They created a methodical methodology for statistically analysing the structure of idea maps. The cluster rating map for the research reported is shown in Figure 3. The number of layers in each cluster stack shows the relative significance of the variables assigned to members in the cluster, with more levels indicating a more excellent mean importance rating for the cluster declaration. A more significant cluster implies that participants sorted sentences more often into the same stacks (indicating a similar disease). Cluster closeness shows that the clusters are more closely associated than the clusters. This likely explains, for instance, why "yellow. rust, and aflatoxin" are near each other but distant from "Monascus."

Figure 2. Top 20 Sources, Authors, and Affiliations on Yellow Fungus

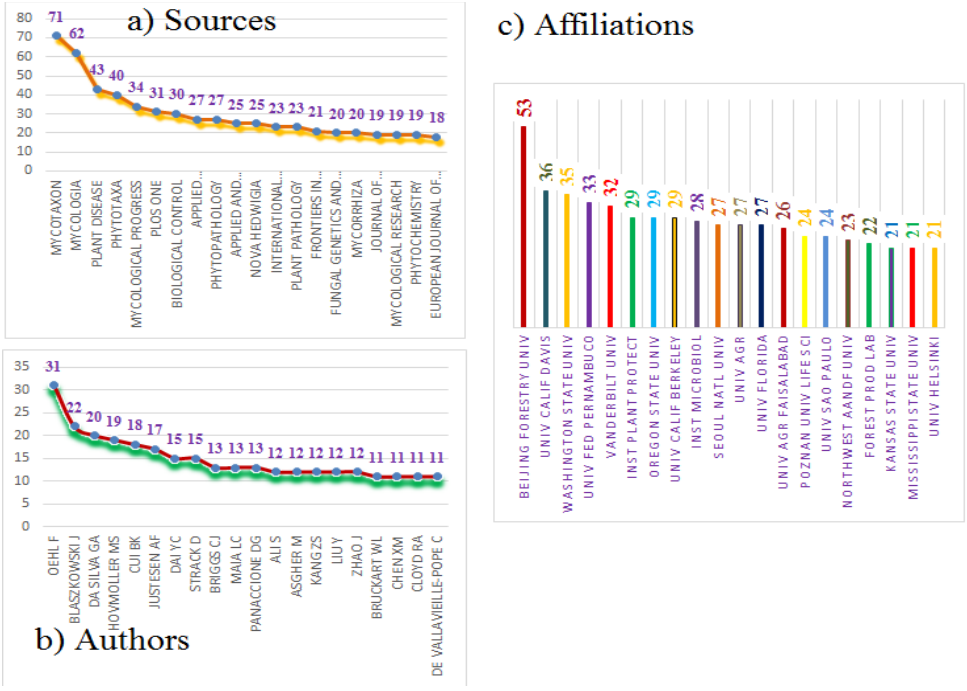


Figure 4 depicts the highly collaborative country, the United States, collaborating with other countries at a much higher frequency (China-43, Canada-20, Brazil-17, Germany-17, Australia-16, Denmark-11, Japan-10, Spain-10, Switzerland-10, France-9, Korea-9, Mexico-9, Netherlands-9, Belgium-8, United Kingdom-8, Pakistan-7, Colombia-6, India-6, Sweden-6, Turkey-6), as well as Germany (United Kingdom-19, Italy-10, France-8, Australia-7, Netherlands-7, Poland-7,The rest of Brazil collaborated with other countries with their respective frequencies (Switzerland: 23, Spain: 15, Germany: 8, the Netherlands: 8, Chile: 6, and the United Kingdom: 5), while other countries only collaborated with two countries, like the United Kingdom, Spain, and

France. Finally, Pakistan only collaborated with Denmark among the top twenty countries.

Figure 3. Conceptual Structure Map-methods: Author's Keyword based on Multiple Correspondence Analysis on Yellow Fungus

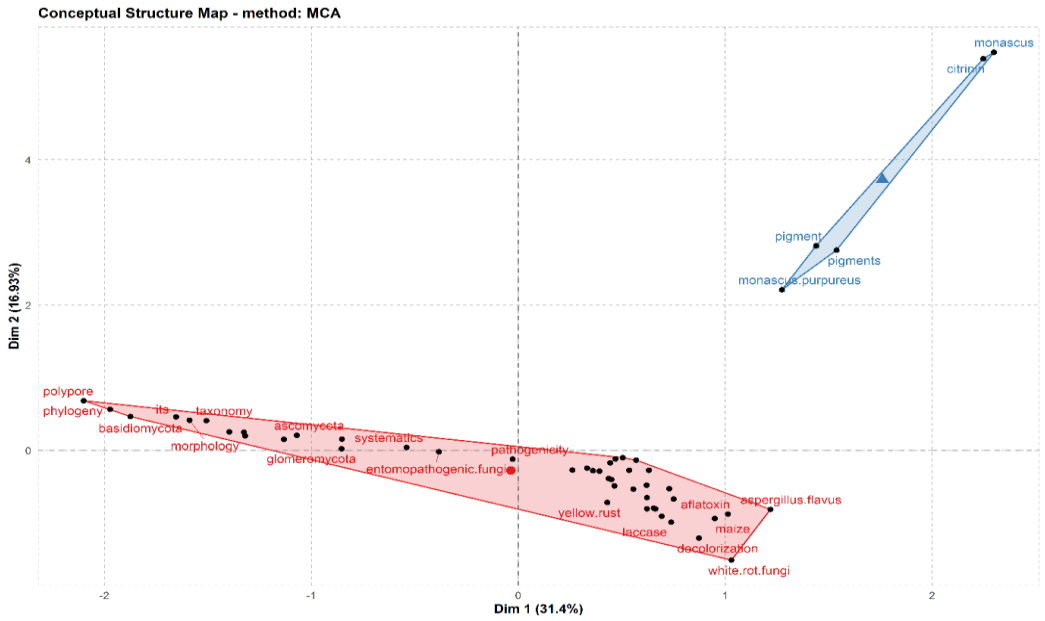
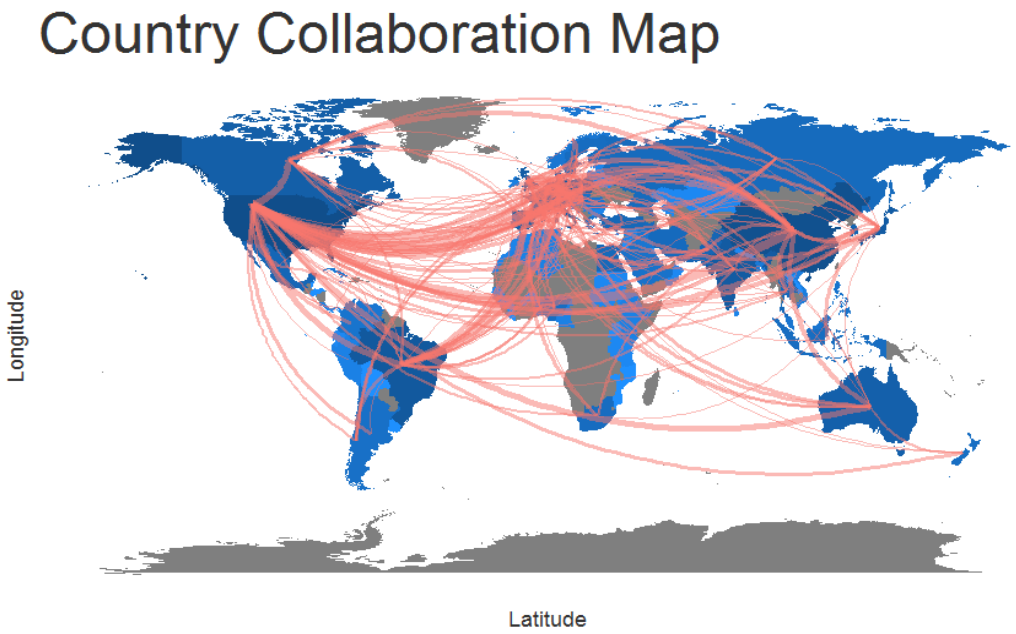


Figure 4. Top 20 Country Collaboration map on Yellow Fungus



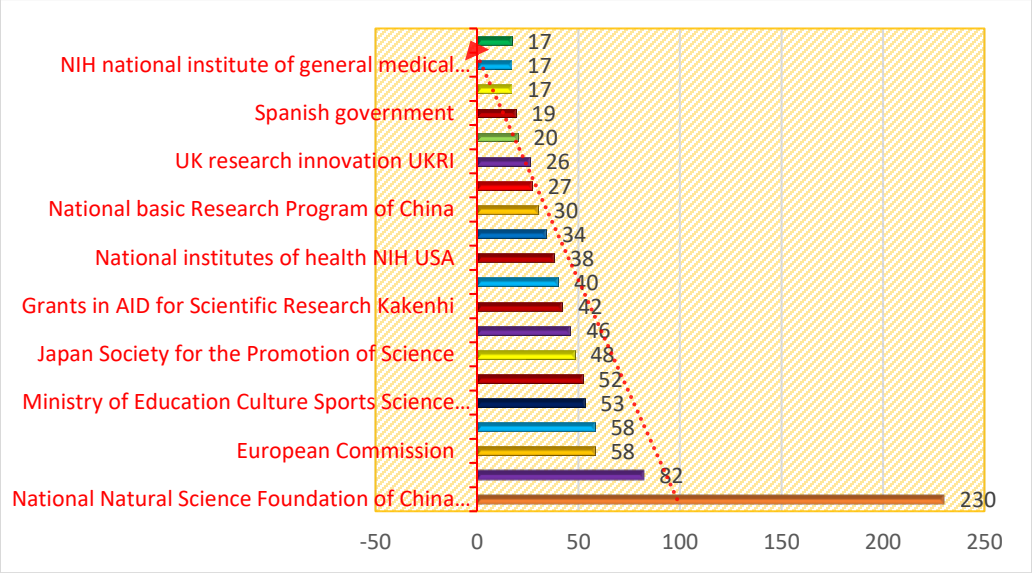
Funding agencies are critical for health services organisations, researchers, and policymakers. Such organisations increasingly support the application of science. In this article, we study health financing organisations and how they promote science's integration into politics and science, and vice versa. Regarding the funding agencies' overall (2704) number of funded

contributions in the field of yellow fungus in Figure 5. The National Natural Science Foundation of China sponsored the most papers (230, 8.506%), followed by the Conselho Nacional De Desenvolvimento Cientifico E Tecnologico (82), the European Commission (58), the National Science Foundation (58), the Ministry of Education, Culture, Sports, Science, and Technology of Japan (53), the Coordenacao De Aperfeicoamento De Pessoal De Nivel Superior (52) and other funding agencies

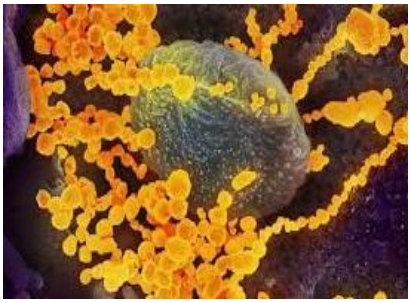
Table 4. Source Impact on Yellow fungus

Source	h index	g index	m index	TC	NP	PY start
Mycotaxon	13	18	0.42	555	71	1991
Mycologia	23	35	0.74	1452	62	1991
Plant Disease	12	22	0.36	550	43	1989
Phytotaxa	11	14	1.38	250	40	2014
Mycological Progress	12	17	0.80	347	34	2007
Plos ONE	13	25	1.18	664	31	2011
Biological Control	13	19	0.46	419	30	1994
Applied Microbiology and biotechnology	14	27	0.48	1099	27	1993
Phytopathology	17	27	0.55	1180	27	1991
Applied and Environmental Microbiology	15	25	0.48	1188	25	1991
Nova Hedwigia	9	15	0.31	258	25	1993
International biodeterioration & biodegradation	13	23	0.43	670	23	1992
Plant pathology	14	23	0.45	783	23	1991
Frontiers in Microbiology	9	12	1.50	175	21	2016
Fungal Genetics and Biology	15	20	0.63	627	20	1998
Mycorrhiza	12	20	0.46	497	20	1996
Journal of Agricultural and Food Chemistry	13	19	0.57	771	19	1999
Mycological Research	12	19	0.39	440	19	1991
Phytochemistry	16	19	0.52	1236	19	1991
European Journal of Plant Pathology	10	18	0.43	327	18	1999

Figure 5. Top 20 Funding Agencies on Yellow Fungus

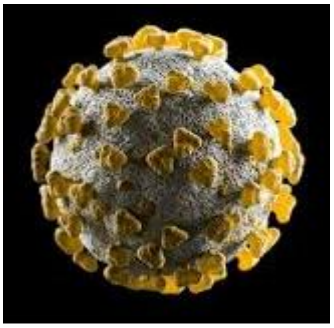


Clinical Representation of Yellow Fungus



The incidence of fungal infections in India has increased dramatically, especially among those who have overcome the effects of the COVID-19 virus. Fungus diseases in the country go from black to white to yellow. The yellow fungus, according to the medical community, is far more dangerous. The first incidence of yellow fungus in India was discovered in Ghaziabad, Uttar Pradesh. Both the government and the medical community have been silent on the matter. The warning signs of the condition are concerning, however. As the yellow fungus may cause severe internal damage, prompt treatment is highly recommended by doctors.

What are yellow fungi?



In India, fungal infections have risen, particularly among those who have battled and overcome COVID-19. Across the country, the yellow fungus has begun to appear after the black and white varieties. The yellow fungus, the physicians say, is the worst kind. The first incidence of the yellow fungus was discovered in Ghaziabad, Uttar Pradesh. The government and medical professionals have kept quiet about it. The signs of this condition, however, are cause for alarm. Doctors recommend acting quickly to treat the yellow fungus to prevent internal harm.

What exactly is yellow fungus infection?

Unlike black fungus, yellow fungus infections have been around for quite some time. According to medical professionals, mucor

septicus was previously exclusively seen in reptiles. Like other fungal infections, yellow fungus is transmitted via contaminated environments or when a suspected patient inhales moulds (mycometes). This disease disperses in a manner distinct from white and black fungi. Fungi may have devastating effects on human health; black fungus can disfigure the face, while yellow fungus destroys internal organs. Since the damage is worse today, experts encourage patients to recognise the sickness immediately and seek treatment.

How does it spread? Is it contagious?

Moulds in the air may cause illness if breathed in. A yellow fungus epidemic might be fueled by high humidity and contaminated food. Inadequate hygiene and dirty settings continue to contribute significantly to the spread of infection. Even though COVID-19 and other fungal infections may affect people with compromised immune systems, the yellow fungus is not contagious. The potential for external dissemination still needs to be determined.

Symptoms of Yellow Fungus

The yellow fungus is responsible for fog weakness, lack of appetite and weight loss. Other indicators include having much mucus or having their eyes seem sunk. Injury recovery is slowed by yellow fungus. Severe cases can result in malnutrition, organ failure, and necrosis. Depending on a person's health and risk factors, yellow fungal infections may either be primary or secondary. Despite advances in medicine, those with compromised immune systems, poor health, or preexisting illnesses like uncontrolled diabetes and high cholesterol continue to face increased dangers. Patients who have overcome COVID and are treated with oxygen or steroids have a higher risk of developing fungal infections. Steroid use is being questioned more and more by medical professionals. The fungus may invade the skin when broken or damaged in other ways, such as by a cut, scrape, burn, or other means.

Furthermore, the CDC (Centers for Disease Control and Prevention) reports that the risk of fungal infections is significant.

- Persons who have served a significant amount of time in the ICU (intensive care unit)
- Have recently undergone a kidney transplant, are dealing with immunological problems, or have insufficient WBC levels.
- Require extensive antibacterial or steroid usage.
- Have renal damage or be placed on dialysis.

Risk factors

The yellow fungus may be a primary or secondary infection, depending on the patient's health and risk factors. People with compromised immune systems and chronic conditions like high cholesterol and uncontrolled diabetes are more likely to get yellow fungus. Those who have survived COVID-19 and are now using oxygen or steroids are susceptible to fungal infections. Wounds, burns, scrapes, and other skin traumas are all potential entry points for fungi. Furthermore, the following groups of persons are considered to be at high risk:

- ICU patients who have been there for a while

- Those who have just had an organ transplant and are experiencing immunological issues due to a low white blood cell count.
- People who use antibiotics or steroids over an extended period
- Dialysis patients; those who have had renal disease;
- Asking questions such as, "Why are yellow fungi more dangerous?"

Because it travels through their body and harms them on the inside, the yellow fungus is the most severe fungal infection.

Treatment

Injections of Amphotericin-B are effective against the yellow fungus.

Prevention of Yellow Fungus

Since the yellow fungus is so novel, very little is known about it. However, the most significant thing for a person's health is to take measures. Fungal infections affect those with weak immune systems. Manageable blood sugar levels are a must for people with diabetes. Also, they need to tidy up their immediate area. Scrub the floors. Get rid of the old food. Humidity in the room and the house should be monitored. Those who use oxygen tanks should regularly replace and clean their water filters and ensure that the oxygen they consume is adequately filtered. Curb the overuse of medicine and steroids. A doctor's advice may include avoiding potential risks, wearing a mask, and isolating oneself from others. When venturing outside, they should do so while wearing clean clothes. There has been an unprecedented increase in fungal infections, especially in those who have recovered from the coronavirus. India has recently seen what doctors call "yellow fungus infections," which are far more dangerous than their black and white counterparts. According to some reports, the yellow fungus sufferer may have also suffered from black and white fungi. Experts have warned that a yellow fungal infection may be more dangerous than black and white fungus infections, requiring urgent medical attention since it may cause significant inside injury. Take a look at this article for an explanation and some safety measures.

Why is it more dangerous than other fungal infections?

Previous evidence suggests that yellow fungus behaves differently from a white and black fungus when it comes to its ability to propagate. Significant internal damage is caused by its spreading within the body. People must start treatment as soon as possible to prevent further difficulties.

How can people protect themselves?

The new disease is currently being researched. It is preferable to prevent illness than treat it. When the immune system is compromised, fungal infections thrive. Extra care must be taken to maintain blood sugar if there is a history of diabetes or if the condition is currently uncontrolled. Patients with COVID-19 need to carefully sanitise their homes since dirty environments encourage the growth of harmful moulds. Patients using oxygen should also check the purity of their gas supply (such as with unclean water). The use of anabolic steroids should be minimised. Patients at risk are told to stay out of harm's way, wear protective gear, and practise good hygiene. Protective clothing that protects the skin from dirty or germy surfaces is also helpful.

Conclusion

The corona pandemic has begun to show signs of Black Fungus, White Fungus, and Yellow Fungus. Large institutions like AIIMS have experts who consider it inaccurate to refer to mucormycosis as a "black fungus." White and yellow fungi are also rare. Many people have developed fungal infections in the past. Everyone agrees, nevertheless, that the lowering of immunity in Corona-infected

persons is to blame for the rise in fungal infections. Combining cortisone, uncontrolled diabetes, and steroids lowers the body's defences. According to the cultural analysis, "black" and "white" fungus originated as colour-based designations. If the bread has gone wrong, a fungus called aspergillus will grow on it.

A distinct kind of fungus causes mucormycosis. The term "black fungus" is not used to describe this organism. Corona or not, this illness has always been more common in people from India than everywhere else. Conditions of heat and humidity are ideal.

Acknowledgement

The authors also thank the anonymous reviewers who provided helpful feedback throughout this study. The World Health Organization, the Web of Science, the Centers for Disease Control and Prevention, and R Software are also very much appreciated. At the same time, any mistakes are entirely our own and in no way reflect poorly on them.

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