

Short Review on Histoplasmosis

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Histoplasmosis is an infection disease that caused by fungus which is called *Histoplasma capsulatum*. It was found in the environment, especially in soil that contains large amounts of bird populations and bat droppings, and enters in to the body by inhalation and affects primarily the lungs [1].

Histoplasmosis caused by the fungus *Histoplasma capsulatum* is often lethal in patients with AIDS. Urine antigen testing is highly sensitive and much quicker for diagnosis than culture. Histoplasmosis can be studied in different countries, especially in south Asia One research has been observed different results in different countries, according to this research he conducted a total of 407 samples and observed different results by country, cases by country varied: Thailand (233), Malaysia (76), Indonesia (48) and Singapore (21). Most cases (255 (63%)) were disseminated histoplasmosis and 177 (43%) cases were HIV associated and according to this reviewer, he observes high histoplasm in skin test sensitivity prevalence were found in Myanmar, the Philippines, Indonesia, Thailand and Vietnam - 86.4%, 26.0%, 63.6%, 36.0% and 33.7%, respectively [2].

In India, 388 cases were published from 1995 to 2017, of which most were diagnosed. From 2004 onwards and overall 29% were HIV-associated patients are affected by histoplasmosis [3].

In Latin America, the number of deaths by histoplasmosis from observed case (6710-15,657) in 2012 was between 671-9394 people are deaths from this disease [4].

The recent out breaks of histoplasmosis

The largest prevalence was reported by Jacob Baker., *et al.* 2019, in Different countries of South Asia Thailand (233) followed by Malaysia (76), Indonesia (48) and Singapore (21).

Histoplasmosis including Hcd and Hcc has been reported from different countries in Africa Reported by [3], in over 31countries, and I take as a sample 14 African Countries and I mentioned in the following tables.

Risk factors

Immunocompromised persons are at significantly increased risks of contracting histoplasmosis. Environmental and wilderness-related risk factors for histoplasmosis include bird and bat watching, cave and cave entrance exploration, and bamboo removal and burning. Occupational risk factors for histoplasmosis include road construction, roofing, bridge and water tower work, demolition, and masonry.

- AIDS
- Solid organ transplant
- Hematopoietic stem cell transplant
- Immunosuppressive agents
- Corticosteroids
- Tumor necrosis factor antagonists
- Congenital T-cell deficiencies

Country	Total number of cases	H. capsulatum var. dubosii	H. capsulatum var. capsulatum	HIV positive	HIV negative
Nigeria	214	124	--	4	210
Ivory Coast	10	7	3	4	6
Ghan	12	4	8	11	1
Senegal	12	9	3	4	8
Mali	8	8	-	-	8
Liberia	2	1	1	2	-
Gambia	1	1	-	1	-
Ethiopia	1	1	-	?	?
Uganda	36	18	4	3	33
Chad	2	2	-	-	2
Somali	1	-	1	-	1
Zaire (DRC)	9	4	5	8	1
Congo	36	35	1	23	13
Cameroon	15	6	9	12	3

Table 1: Rita O Oladele., *et al.* [3].

Figure 1: Map of reported cases of histoplasmosis infection by country 1932–2018. Jacob Baker, 2019. pyrolysis of agro-residue.

- Gamma interferon receptor deficiency (Sources: Carol a. Kauffman [5] Clinical microbiology reviews)
- Hyper immunoglobulin M syndrome Workers who perform demolition or renovation work in buildings where bat or bird droppings have accumulated
- Gardeners who use bird or bat droppings as fertilizer
- Excavation workers who uproot trees that have been used for bird or bat roosting
- Persons cleaning fireplaces below chimneys in which bats or birds have roosted
- Long-term smokers
- People with severely compromised immune systems — such as those with AIDS or leukemia, persons on steroid therapy, those on chemotherapy, and recent transplant recipients. Sources [6].

Epidemiology

The fungus is found throughout the world and grows in soil that has been enriched with bat or bird droppings or in bat droppings themselves. For example, the fungus is common around old chicken houses, in caves and other areas harboring bats, and around starling and blackbird roosts. The fungus produces spores that can become airborne if the soil is disturbed. Inhalation of these spores may cause infection. The disease is not spread from person to person. It is not acquired from animals that have the disease [6].

Zoonotic importance

Histoplasmosis is not contagious or not zoonotic, but humans are infected from environment.

Forecasted risk

- Humans, domestic animals and wildlife are inextricably linked by epidemiology of infectious diseases (IDs) and IDs will continue to emerge, re-emerge and spread.
- Human-induced environmental changes, interspecies contacts, altered social conditions; demography and medical technology affect microbes' opportunities.
- Many people are affected by one or more emerging and re-emerging diseases like histoplasmosis.
- Communities that at risk for histoplasmosis may be affected again in the coming decades especially those whom contacts with bats and bats droplet especially farmers are at risk.

- The diseases thrive in places with where there is high number of bats population are present and those who use for drinking unsafe water, poor sanitation, and limited access to basic health care are at risk.
- Despite the severe pain and life-long disabilities they cause, these diseases are often less visible and given a low priority alongside high mortality diseases.

Possible approaches to prevent and control

- Prevent bats and birds from entering buildings to prevent the buildup of droppings
- Avoid areas that may harbor the fungus, particularly those areas with accumulations of bird or bat droppings.
- If cleaning, excavating, or disturbing soil in an area with accumulated bird or bat droppings: minimize exposure to spores in dust by first wetting the area with a low-velocity spray or mist of water before cleaning (a high pressure water stream can cause spores to become airborne before they can be soaked)
- Wear disposable clothing and a properly-fitting N-95 (available at hardware and home improvement stores) or better respirator capable of filtering particles 1 micron in diameter
- Collect and seal whetted material in heavy-duty plastic bags, a 55-gallon drum, or some other secure container for immediate waste disposal
- Keep the respirator on until finished, then walk into a droppings-free area, remove respirator and protective clothing, and place it in a double-sealed plastic bag for waste disposal
- Ensure that people who have compromised immune systems do not clean up areas that may harbor histoplasmosis. Large accumulations of bird or bat droppings should be removed by a professional cleanup [6].

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