

Estimated Burden of Serious Fungal Infections in Togo

Améyo M. Dorkenoo^{1,2}, Bright K. Ocansey^{3,4*}, Efoe Sossou², Fiali Lack², Akovi Adjetej-Toglozombio¹ and David W. Denning^{4,5}



1. Department of Parasitology and Mycology, University Teaching Hospital of Lomé, Lomé, Togo
2. Ministry of Health and Public Hygiene, Lomé, Togo
3. Laboratory Unit, New Hope Specialist Hospital, Aflao, Ghana.
4. Faculty of Biology, Medicine and Health, University of Manchester, Manchester, UK.
5. National Aspergillosis Centre, Wythenshawe Hospital, Manchester University NHS Trust, UK

Background:

Over the years the focus of infectious diseases in many African countries has been mainly on HIV, malaria and tuberculosis. Fungal infections which are more frequent in these countries, and with comparable mortality rates, remain neglected due to lack of awareness coupled with diagnostic and therapeutic deficiencies. Majority of studies on fungal infections in Togo are case reports and case series, particularly involving mainly cutaneous and subcutaneous fungal infections. Recent studies are gradually including invasive fungal infections such as Cryptococcal meningitis and Pneumocystis pneumonia. Nonetheless, data on the collective burden of serious fungal infections in Togo is unavailable.

Results:

- Results showed that about 7.7% of the 7,265,286 Togolese population suffer from serious fungal infections annually.
- For the estimated 110,000 HIV population, 1,342, 1,650 and 330 develop cryptococcal meningitis, Pneumocystis pneumonia and disseminated histoplasmosis respectively per year.
- Oral and oesophageal candidiasis annually affects 19,800 and 7,535 persons living with HIV respectively.
- Incidence of invasive aspergillosis (IA) was 265 cases.
- Prevalence of chronic pulmonary aspergillosis was estimated to be 646 cases including 128 cases following tuberculosis.
- Prevalence of allergic bronchopulmonary aspergillosis (ABPA) and severe asthma with fungal sensitization (SAFS) was respectively 4,577 and 6,042 cases.
- Tinea capitis affects nearly 404,000 children
- Recurrent Candida vaginitis (>4 episodes per year) affects 108,979 women.
- Candidaemia prevalence was 5 cases per 100 000 inhabitants.
- Fungal keratitis in Togo may affect 203 persons annually.

Objective:

Estimate the prevalence and/or incidence of serious fungal infections in Togo.

Methods:

Incidence and prevalence of serious fungal infections were estimated based on deterministic modelling previously developed by the Leading International Fungal Education (LIFE) was applied, using socio-demographics, health system's information, risk-groups data and fungal infection rates obtained from national and international studies depending on which is available.

Serious Fungal Infection	Number of persons per underlying condition					Rate/100K	Total
	None	HIV/AIDS	Respiratory Dx	Cancer	ICU		
Cryptococcal meningitis	-	1342	-	-	-	18.7	1342
Pneumocystis pneumonia	-	1650	-	-	-	22.71	1650
Disseminated histoplasmosis	-	330	-	-	-	4.54	330
Invasive aspergillosis	-	188	57	20	-	3.64	265
Mucormycosis	4	-	-	-	-	0.06	4
Chronic pulmonary aspergillosis (CPA)	-	-	646	-	-	9	646
Allergic bronchopulmonary aspergillosis (ABPA)	-	-	4577	-	-	63	4577
Severe asthma with fungal sensitization (SAFS)	-	-	6042	-	-	83	6042
Candidaemia	-	-	-	254	109	5	363
Candida peritonitis	-	-	-	-	54	0.75	54
Oral candidiasis	-	19800	-	-	-	273	19800
Oesophageal candidiasis	-	7535	-	-	-	104	7535
Recurrent Candida vaginitis (RVVC)	108979	-	-	-	-	1500	108979
Fungal keratitis	203	-	-	-	-	2.8	203
Tinea capitis	403950	-	-	-	-	5560	403950
Total serious fungal infection burden							555742

Conclusion:

- Prevalence and incidence rates of serious fungal infections are substantial in Togo and should prompt further epidemiological studies.
- There is the need to increase awareness among healthcare professionals, enhance diagnostic and therapeutic capacities since most fungal tests on the essential diagnostics list are unavailable and fluconazole, terbinafine and amphotericin B are the only available systemic antifungals.
- These could result in better awareness, improved research and rapid diagnosis and effective management of fungal infections in Togo.