

here are the most frequent mycoses – superficial. Invasive mycoses are dominated by aspergillosis and candidosis.

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**The burden of serious fungal infections in Portugal**

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**Objectives** We here attempt the first estimate of the burden of serious fungal disease in Portugal using deterministic scenario modelling and published incidence and prevalence data.

**Methods** Published epidemiology papers reporting fungal infection rates from Portugal were identified. Where no data existed, we used specific populations at risk and fungal infection frequencies in those populations to estimate national incidence or prevalence, depending on the condition. Population statistics were derived from the Statistics Portugal and the population census (2011). The incidence and prevalence of fungal infections affecting HIV patients were obtained from the report on HIV/AIDS 2013 published by the National Health Institute Doutor Ricardo Jorge, I.P. The total number of transplants was obtained from the Authority for Blood Services and Transplantation (data from 2011). Data on respiratory infections were recovered and inferred from the WHO data on TB.

**Results** The population of Portugal in 2011 was 10.56M, with 75% >15 years of age. An estimated 150 000 women (15–50) suffer from recurrent vulvovaginal candidiasis each year. We have not estimated oral or oesophageal candidiasis rates. Candidaemia affects 0.88/1000 hospital admissions or approximately 8.1/100 000 patients, a total of 856 cases nationally. An estimated 150 patient develop intra-abdominal candidiasis, post-operatively. Invasive aspergillosis is less common than other countries as COPD is uncommon in Portugal, a total of 180 cases annually. An estimated 69 patients develop chronic pulmonary aspergillosis after TB each year. So, assuming a 15% annual mortality and surgical resection rate, the prevalence is 218 cases following TB, whereas the prevalence of chronic pulmonary aspergillosis for all underlying pulmonary conditions was 654 patients. In contrast, asthma rates are high and so an estimated 23 198 SAFS episodes (220 cases/100 000), 17 586 ABPA episodes (167/100 000). 81 patients developed pneumocystis pneumonia in AIDS and 16 cryptococcosis. Data on dermatophytosis and fungal keratitis were not included in this study.

**Conclusion** Using published data, we were able to estimate the incidence or prevalence of the above referred fungal infections and ~194 293 (1.8%) people in Portugal suffer from those fungal infections each year. Vaginal candidiasis was the most frequent fungal infection detected in this study. Further inclusion of dermatomycosis data will largely increase the incidence and prevalence of fungal infections. This is a preliminary study but constitutes the first report on the global burden of fungal infections in Portugal. Further studies based on local surveys are required to obtain more precise and complete data.

**Table 1**

Infection	Number of infections per underlying disorder per year					Rate/100K	Total burden
	None	HIV/AIDS	Respiratory	Cancer/Tx	ICU		
Oesophageal candidiasis	-	-	-	-	-	-	-
Candidaemia	-	-	-	556	300	8.1	856
Candida peritonitis	-	-	-	-	150	1.9	150
Recurrent vaginal candidiasis (by year*)	149,75	-	-	-	-	2,856*	149,751
ABPA	-	-	17,536	-	-	167	17,536
SAFS	-	-	23,198	-	-	220	23,198
Chronic pulmonary aspergillosis	-	-	64	-	-	6.7	654
Invasive aspergillosis	-	-	-	97	93	1.7	190
Mucormycosis	-	-	-	21	-	0.2	21
Cryptococcosis	-	16	-	-	-	0.2	16
Pneumocystis pneumonia	-	81	-	-	-	0.8	81
<b>Total burden estimated</b>	<b>149,75</b>	<b>97</b>	<b>41,438</b>	<b>674</b>	<b>533</b>		<b>194,293</b>

\* rate for females only.

ABPA = Allergic bronchopulmonary aspergillosis SAFS = Severe asthma with fungal sensitisation

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**The burden of serious fungal infections in Venezuela**

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**Introduction** Venezuela is just north of the equator and has high rates of endemic fungal infections, HIV and hospital infections. The burden of fungal infection in Venezuela is not known, despite some epidemiological studies. This is the first estimate of the burden of serious fungal disease in Venezuela.

**Methods** We have used deterministic scenario modelling and published incidence and prevalence data on both underlying diseases and fungal infection rates from Venezuela to estimate burden. Where no data existed, we used specific populations at risk and fungal infection frequencies in those populations to estimate burden. Population statistics were derived from the Instituto Nacional de Estadística (<http://www.ine.gov.ve>). Data on respiratory infections were obtained and inferred from the WHO data on TB.

**Results** In 2011, the population of Venezuela was 29.44M, with 71% >15 years of age, and about 9% >60 years of age. An estimated 474 720 women (15–50) suffer from recurrent vulvovaginal candidiasis each year. Of the 110 000 HIV positive patients, an estimated 59 000 have CD4 counts <350, and 14 700 are at high risk of infection. We estimate that 2699 develop PCP *Pneumocystis pneumonia* in AIDS, 693 cryptococcosis and 1746 disseminated histoplasmosis, in AIDS. There are an estimated 3800 deaths from AIDS annually. Candidaemia is relatively common with affects 1.72/1000 hospital admissions or approximately 16/100 000 patients, a total of 4798 cases nationally. An estimated 824 patient develop intra-abdominal candidiasis post-operatively. Invasive aspergillosis is thought to affect 1143 people each year. An estimated 226 patients develop chronic pulmonary aspergillosis after TB each year, a prevalence of 711 cases and overall 1422 patients. Assuming ABPA affects 2.5% of adult asthmatics, 33 440 cases are likely and 44 141 SAFS cases. Data on dermatophytosis were not included in this study and there are few data on fungal keratitis, mucormycosis, coccidioidomycosis and paracoccidioidomycosis.

**Conclusion** Over 565 685 Venezuelans are affected by serious fungal disease annually, with many deaths. Further studies based on local surveys are required to obtain more precise and complete data.

**Table 1**

Infection	Number of infections per underlying disorder per year					Rate/100K	Total burden
	None	HIV/AIDS	Respiratory	Cancer/Tx	ICU		
Oesophageal candidiasis	-	-	-	-	-	-	-
Candidaemia	-	-	-	3150	1648	16	4,798
Candida peritonitis	-	-	-	-	824	3	824
Recurrent vaginal candidiasis (by year*)	474,720	-	-	-	-	3,225*	474,720
ABPA	-	-	33,440	-	-	114	33,440
SAFS	-	-	44,141	-	-	150	44,141
Chronic pulmonary aspergillosis	-	-	1422	-	-	5	1422
Invasive aspergillosis	-	-	-	100	963	4	1143
Mucormycosis	-	-	-	59	-	0.2	59
Cryptococcosis	-	693	-	-	-	2	693
Pneumocystis pneumonia	-	2,699	-	-	-	9	2,699
Disseminated histoplasmosis	-	1,746	-	-	-	6	1,746
<b>Total burden estimated</b>	<b>474,720</b>	<b>5,130</b>	<b>77,581</b>	<b>3,389</b>	<b>3,435</b>		<b>565,685</b>