

Session: P071 Epidemiology of fungal infections II

**Category: 6a. Fungal disease epidemiology & clinical trials**

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### Estimation of serious fungal disease burden in Belarus

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**Background:** Fungal disease is well recognized in perceived to be rare in Belarus. The diagnostic tools are unavailable in most centres and no systematic data on incidence and prevalence is collected. The burden of respiratory disease is high, notably TB, COPD and probably asthma. In 2011, the systemic antifungal usage was 0.71 packages per 1000 population, among the lowest in Europe (Adriaenssens N, et al J Antimicrob Chemother 2015;70:2173). Here we estimate the burden of serious fungal infections in Belarus for the first time.

**Material/methods:** We found no existing data and so estimated the incidence and prevalence of fungal diseases based on the populations at risk. HIV data were derived from UNAIDS (2012) report and the 2013 WHO TB report. We derived COPD data from Ukrainian data. Lung cancer incidence was from Globocan.

**Results:** The population of Belarus is ~9.6 million; 15% are children, and 19% are >65 years. An estimated 713 have CPA after pulmonary tuberculosis (3,535 survivors in 2015) 40% of the total burden. ABPA and SAFS were estimated in 5,891 and 7,776 respectively, in 235,830 adult asthmatics. Among those 35,000 estimated to have HIV infection, of whom 47,000 are at risk of an OI, an estimated 1,620 develop oesophageal candidiasis, 129 develop PCP (6% rate) and 40 cryptococcal meningitis (1.7% rate) each year. Using a 5/100,000 rate, candidaemia is found in 476 patients (1,190 total invasive candidiasis) and 261 invasive aspergillosis (including 104 cases in lung cancer, and 99 in hospitalized COPD patients. Recurrent vulvovaginal candidiasis (>4 episodes/year) is estimated to occur in 164,271 females (3,437/100,000 females). There are no incidence data on tinea capitis, fungal keratitis or mucormycosis.

**Conclusions:** The present study indicates that at least 2% (191,382) of the population is affected by a serious fungal infection annually. This problem is serious enough to warrant the first epidemiological studies of fungal disease in Belarus.

Infection	Number of infections per underlying disorder per year					Total burden	Rate /100K
	None	HIV/AIDS	Respiratory	Cancer/Tx	ICU		
Oesophageal candidiasis	-	1,620	-	-	-	1,620	17
Candidaemia	-	-	-	335	143	478	5
Recurrent vaginal candidiasis (4x/year +)	164,271	-	-	-	-	164,271	3,437*
ABPA	-	-	5,891	-	-	5,891	62
SAFS	-	-	7,776			7,776	81
Chronic pulmonary aspergillosis	-	-	1,783	-	-	1,783	19
Invasive aspergillosis	-	-	104	57	99	156	1.6
Cryptococcal meningitis	-	40	-	-	-	40	0.4
Pneumocystis pneumonia	-	129	-	-	-	129	1.4
<b>Total burden estimated</b>	164,271	2,389	15,554	394	314	<b>191,382</b>	