

Burden of Serious Fungal Infections in Jordan

Jamal Wadi ⁽¹⁾ and David W. Denning ⁽²⁾, in association with the LIFE program at www.LIFE-Worldwide.org
The Medical Center, Jordan Hospital and Medical Center, Amman, Jordan (1) and The University of Manchester, Manchester UK (2)

Objective: to estimate the burden of fungal infections in Jordan, for the first time.

Material and Methods: Population data was from UN 2011 statistics and TB cases from WHO in 2012. Fewer than 100 patients with HIV are recorded in Jordan in 2013. Approximately 100 renal transplants and 8 liver transplants are done annually. There were 12,233 major surgical procedures in Jordan in 2013, of which 5.3% were major abdominal surgeries; candidaemia was estimated at 5% of the population based on other countries, with 33% occurring in ICU. Candida peritonitis/intra-abdominal candidiasis was estimated to affect 50% of the number of ICU candidaemia cases. No adult asthma rates have been recorded for Jordan, so the rate from Israel (8.54% clinical asthma) from To et al, 2012 has been used.

There are an estimated 49,607 COPD patients in Jordan (Polatli et al, 2012), with 64% symptomatic, 25% Gold stage 3 or 4 (Omari et al, 2014) and 7% (3,472) are assumed to be admitted to hospital each year. No cystic fibrosis cases have been recorded. Literature searches on fungal infections revealed few data and no prevalence data on fungal keratitis or tinea capitis, even though tinea

Results: Jordan has 6.3 million inhabitants (65% adults, 6% are >60 years old). The current burden of serious fungal infections in Jordan was estimated to affect ~119,000 patients (1.9%), not including any cutaneous fungal infections. Candidaemia was estimated at 311 cases and invasive aspergillosis in leukaemia, transplant and COPD patients at 84 cases. Chronic pulmonary aspergillosis prevalence was estimated to affect 22 post-TB patients, and 88 in total. ABPA and SAFS prevalence in adults with asthma were estimated at 8,900 and 11,748 patients. Recurrent vulvovaginal candidiasis was estimated to affect 97,800 patients, using a 6% rate among women 15-50 years of age. Tinea capitis comprised 34% of patients with dermatophytoses in Jordan (Abu-Elteen, & Malek, 1999).

Conclusion: Based on local data and literature estimates of the frequency of mycoses in susceptible populations, at least 1.9% of Jordanians have some form of serious fungal disease.



Jordan has:

- 6.3 million inhabitants (65% adults, 6% are >60 years old).
- The current burden of serious fungal infections in Jordan was estimated to affect ~119,000 patients (1.9%), not including any cutaneous fungal infections.

Infection	Number of infections per underlying disorder per year					Total Burden	Rate / 100,000
	None/Other	HIV/AIDS	Respiratory	Cancer/Tx	ICU		
Invasive/systemic/deep infections						486	7.7
Candidaemia				221	95	316	5.0
Candida peritonitis					47	47	0.8
Mucormycosis				1		1	0.02
Cryptococcal meningitis		0		0			0
Pneumocystis pneumonia		6				6	0.1
Invasive aspergillosis				39	45	84	1.34
Chronic pulmonary aspergillosis			88			88	5.4
Allergic disease						-	-
Allergic bronchopulmonary aspergillosis (ABPA)			8,900			8,900	140.9
Severe asthma with fungal sensitisation (SAFS)			11,748			11,748	186
Superficial infections often requiring systemic treatment						97,811	
Oesophageal candidiasis		6				6	0.1
Recurrent Candida vaginitis (>4x/year)	97,804					97,804	3,097*
Total burden estimated	97,804	6	20,681	258	187	118,954	

Conclusion: Based on local data and literature estimates of the frequency of mycoses in susceptible populations, at least 1.9% of Jordanians have some form of serious fungal disease.