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**Burden of serious fungal diseases in Republic of Korea**

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**Objectives** Republic of Korea is a member of the Organization for Economic Cooperation and Development (OECD) with a population of 50.7M in 2011 (49.9% female, 9.2% ≥ 65 years) and GDP of $30,370 in 2009. Although advanced health surveillance systems are being used in Korea, there have been no nationwide data for serious fungal diseases to date. The objective of this study is to estimate the burden of serious fungal diseases in Republic of Korea.

**Methods** The bases for the computations have been adopted from previously published literature (Denning et al. Bull World Health Organ. 2011:89:864–72 and Denning et al. Med Mycol. 2013:51 (4):361–70). Population and hospital data were obtained from Korean Statistical Information Service (KOSIS). HIV/AIDS data were obtained from World Health Organization (WHO), Korea Centers for Disease Control and Prevention (KCDC), and the KCDC Cohort Study in HIV/AIDS patients. Transplant data of 2011 were obtained from KCDC and Korean Society of Blood and Marrow Transplantation.

**Results** Current burden of serious fungal diseases in Republic of Korea was estimated at 961,417 cases every year (1.9% of Korean population; details shown in Table). Based on the 888 newly diagnosed HIV/AIDS patients in 2011 with the assumption that 1.1% of HIV/AIDS patients present with cryptococcal meningitis, the burden of cryptococcal meningitis was estimated at 10 cases, plus with assumption that 10% present with Pneumocystis jiroveci pneumonia, the burden of PCP was estimated at 89 cases yearly in this population. Desquamal candidiasis has been estimated to affect 115,177 patients every year, including 10,510 patients with cancer. Assuming the prevalence of asthma in adults is 4.57%, the prevalence of ABPA was estimated at 94.8/100,000 and SAPS at 125.2/100,000. The rate of candidemia was estimated at 5/100,000 population with 2,537 cases per year. Assuming 5% of adult women have recurrent Candida vaginitis, Candida vaginitis affected 689,214 women. Invasive aspergillosis in immunocompromised patients was estimated at 813 patients and in COPD admissions 1,215 cases with a combined rate of 3.5/100,000. Apart from serious fungal infections, there were 2,584,446 patients (4.7% of population) with dermatophytoses in 2009, including 40,700 children (0–9 years) and 116,384 older children (10–19 years). Prevalence of tinea capitis in children was unable to be identified.

**Conclusion** Based on local data and estimates of this investigation, 1.9% of South Koreans have serious fungal diseases. Considering that nationwide survey of fungal infections in susceptible populations are lacking and invasive fungal infections in cancer or HIV/AIDS patients tend to be under-reported by medical record/health insurance systems, the true number of serious fungal infections in Korea should be higher than our estimates.

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**Table 1** Burden of serious fungal diseases in Korea.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Burden</th>
<th>New</th>
<th>HIV/AIDS</th>
<th>Transplant</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>961,417</td>
<td></td>
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