Burden of serious fungal infections in New Zealand
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Objectives: To estimate the annual burden of serious fungal infection in New Zealand (NZ), a temperate high-income country in the South Pacific. Methods: The national database of discharge diagnoses from hospitals for 2011 was searched by ICD codes. HIV related infections were obtained from surveillance data. The expected numbers of cases of fungal infection were estimated in people with other predisposing conditions including: asthma; chronic obstructive pulmonary disease (COPD); acute myeloid leukaemia (AML); those having haematopoietic and solid organ transplants; and women in the general population having recurrent candida vaginitis. Transplant numbers came from the national registries, asthma rates from the Global Initiative for Asthma report, COPD hospitalisation rates from the Organisation for Economic Co-operation and Development. Results: Of a population of 4.4 million, 20% were younger than 16 years, and 13% 65 or older. The estimated number of serious fungal infections was 91,658. The largest contributor was recurrent candida vaginitis (65.8%), followed by severe asthma with fungal sensitisation and allergic bronchopulmonary aspergillosis that together comprised 33.6%. Less common were candidaemia (0.2%), invasive aspergillosis (0.2%), chronic pulmonary aspergillosis (0.2%), cryptococcal meningitis (0.1%), pneumocystispneumonia (0.1%) and fungal keratitis (0.3%). There were insufficient data to reliably estimate the incidence of candida peritonitis. Those most at risk had received a transplant, immune suppressive therapy, had HIV infection, or management in the intensive care unit (ICU). Conclusion: Based on these estimates, approximately 2% of the population suffer from a significant fungal disease every year. Notable were the estimated high number of women with recurrent candida vaginitis, and a high rate of respiratory-related fungal disease, driven by the high asthma prevalence in NZ. Other sources contribute a small but medically important number of cases. This study serves as a basis for future research. Improved surveillance of these conditions would be valuable.