

P1045

Abstract (poster session)

**Estimation of the burden of chronic- and allergic-aspergillosis in India**

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**Objective:** India is the world's second most populous country, with high rates of TB and HIV. Comprehensive baseline data is necessary for effective prioritization of limited public health resources. Using scoping review methodology and deterministic modelling, we have estimated the incidence and 5yr period prevalence of chronic pulmonary aspergillosis (CPA) following TB and prevalence of allergic bronchopulmonary aspergillosis (ABPA) complicating asthma in India. These long term conditions respond to antifungal therapy. **Methods:** The bases for the computations have been published (Denning et al, Bull WHO 2011;89:864-72 and Denning et al, Med Mycol 2013. In press). Estimated pulmonary TB rates were updated from 2007 to 2011 using WHO statistics, with deaths excluded. Asthma rate in adults was estimated from the country-specific prevalence of asthma from the GINA report applied to population estimates (mean prevalence of current wheezing in children was 88% of adults in the countries which participated in both studies). Additional modeling was done to accommodate several ABPA studies in India. **Results:** In 2011, the population of India was estimated at 1,241,000K. The number of cases of pulmonary TB in India has fallen slightly from 3,305K to 3,100K (2,100K – 4,300K) (249/100K) and the mortality also from 331K to 300K (24/100K). The annual estimated incidence of new CPA cases has risen from 83,000 to 85,012 and 5 year period prevalence from 261,679 to 267,987. Rates of ABPA complicating asthma with good denominators of referral populations (n=5 studies) vary from 0.7 to 3.5%, with the median being 2.5%. The number of adult asthmatics is estimated at 23,709K and ABPA at 592,719. If rates of 5%, 7% and 20% are applied (Table), the gross numbers of ABPA patients estimated in India rises to 1,185K, 1,660K and 4,742K respectively. All estimates (n=7) of Aspergillus sensitisation rates in adult asthmatics in India exceed 16% and are 50% in asthmatics admitted to ICU with asthma. **Conclusion:** The total burden of antifungal-responsive chronic and allergic aspergillosis in India is not known, but is likely to exceed 860,000 patients. CPA has many underlying conditions in addition to TB, which are not estimated. CPA carries an early mortality of 30% after diagnosis (Korea and Japan), emphasising the importance of antifungal therapy to minimise death and morbidity. Epidemiological studies are required to better categorise the burden of these diseases in India.

Year	Population	Time frame	N studied	ABPA N	Comments	Reference
1976	Cohort study of secondary and tertiary ? fungal disease referrals	3-4 years	367	17 (4.6%)	IgE not measured, and patients had to have asthma and periodic infiltrates, positive skin test, eosinophilia, <i>A. fumigatus</i> grown from sputum and positive <i>Aspergillus precipitins</i> .	Khan et al
2005	Sequential asthma referrals to a tertiary centre	NS	105	8 (7.6%)	12 patients excluded. Healthy control group also evaluated. Patients also sensitized to non- <i>fumigatus Aspergilli</i>	Maurya et al
2007	Sequential referrals to a tertiary centre	4.5 years	755	155 (20.5%)	Full diagnostic details not provided for all ABPA patients.	Agarwal et al
2010	Referrals to a tertiary centre	1 year	215	15 (7%)	Excluded: those in receipt of corticosteroids for 2 weeks in prior 6 months and allergic rhinitis or chronic sinusitis. 6 patients grew <i>A. flavus</i> .	Ghosh et al