

Chronic Pulmonary Aspergillosis (CPA) is likely to be a common complication of pulmonary tuberculosis: initial results of a cross-sectional survey.

Iain D Page^{a,b,c}, Nathan Onyachi^d, Cyprian Opira^e, John Opwonya^f, Emmanuel Odongo-Aginya^g, Andrew Mockridge^a, Gerard Byrne^a, Malcolm Richardson^{a,b,c}, David W Denning^{a,b,c}
a - Institute of Inflammation and Repair, The University of Manchester, UK, b - Manchester Academic Health Science Centre, c – National Aspergillosis Center and Mycology Reference Centre, University Hospital South Manchester, UK, d – Gulu Regional Referral Hospital, Uganda, e – St. Mary’s Hospital, Lacor, Uganda, f – Gulu District Health Office, Uganda, g – Gulu University, Uganda

INTRODUCTION

- CPA is estimated to affect 2-3 million people worldwide.
- In 1968-70 the UK MRC surveyed 544 patients with residual cavities after pulmonary TB treatment¹.
 - 34% of these patients had positive *Aspergillus* precipitins.
 - 2/3 of those with antibodies developed aspergilloma within 2 years and haemoptysis was common.
- This is the only published survey of CPA prevalence in persons with treated pulmonary TB.
 - The impact of HIV co-infection on CPA prevalence in this group is therefore not known.
- The 5-year mortality of CPA is up to 85%².
- Treatment with itraconazole has proven efficacy for CPA in an RCT and surgery is safe and curative in selected patients^{3,4}.
- We recently demonstrated that the Siemens Immulite *Aspergillus*-specific IgG assay has a specificity of 98% and sensitivity of 96% for the diagnosis of CPA (eposter 1099).
- Here we describe interim results from the first survey of the prevalence of CPA secondary to treated pulmonary tuberculosis in Africa.

METHODS

- 400 adult patients who completed treatment for pulmonary tuberculosis within the last 7 years were recruited.
- Half were HIV positive.
- Recruitment took place in Gulu, Uganda between September 2012 and January 2013.
- Each patient underwent structured history, chest x-ray and *Aspergillus*-specific IgG testing by Siemens Immulite assay.
- HIV positive patients had CD4 count performed if no result was available from the last 6 months.
- CPA was diagnosed when ALL of the following are present:-
 1. Cough for >1 month.
 2. Cavitation or aspergilloma on chest x-ray.
 3. Raised levels of *Aspergillus*-specific IgG.
- Simple aspergilloma is diagnosed in patients with aspergilloma on chest x-ray, where the other 2 criteria for CPA are not met.

PATIENT CHARACTERISTICS

- Median age 42 years (range 16 – 83).
- 39% female.
- 50% HIV positive.
 - Median CD4 count 415 cells/μL (range 0-1400).

Result	Number of patients	Frequency (n=400)
Chronic cough	96	24%
Raised <i>Aspergillus</i> -specific IgG	46	11.5%
Cavities on CXR	96	24%
Aspergilloma on CXR	12	3%
DIAGNOSES		
CPA	19	5%
Simple aspergilloma	5	1%
All pulmonary aspergillosis (CPA + simple aspergilloma)	24	6%

HIV infection had no significant impact on the frequency of any result or diagnosis.

CONCLUSIONS

- CPA complicates treated tuberculosis in Uganda.
- CPA should be considered in any patient with chronic cough or progressive cavitation following treated pulmonary tuberculosis.
- While most cases of TB are not complicated by CPA, the large number of cases of TB in high prevalence areas means that CPA will affect large numbers of people.
- These results are consistent with the prediction of 1.3 million cases of CPA secondary to TB globally – **CPA is likely to represent a global public health issue.**
- A resurvey is now being conducted with repeat CXR, CT thorax in those with positive *Aspergillus*-specific IgG and GeneXpert pcr testing to exclude recurrent tuberculosis in those with productive cough.
- Final results will be published later in 2015.

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3 - Agarwal R, Vishwanath G, Aggarwal AN, Garg M, Gupta D, Chakrabarti A. Itraconazole in chronic cavitary pulmonary aspergillosis: a randomised controlled trial and systematic review of literature. *Mycoses*. 2013;56(5):559–70.
4 - Chen Q-K, Jiang G-N, Ding J-A. Surgical treatment for pulmonary aspergilloma: a 35-year experience in the Chinese population. *Interact Cardiovasc Thorac Surg*. 2012;15(1):77–80