

## Minimising HIV deaths through rapid fungal diagnosis and better care in Guatemala.

2019 report on activities (supplement to the GAFFI annual report)

### Training activities

In May 14<sup>th</sup> 15<sup>th</sup>, 2019 the IV National Workshop: “*Manejo y Tratamiento de las Infecciones Oportunistas en VIH, Identificando Brechas y oportunidades en FUNGIRED*”, was held on Guatemala City, with the following overall objective: During this annual meeting, talks were provided by different experts such as Juan Luis Rodríguez Tudela (GAFFI), Hortencia Peralta (OMS), Dalia Lau-Bonilla (ASI), Eduardo Arathoon (CFLAG), Diego Caceres (CDC), and Juan Carlos Pérez (CFLAG), Luis Aguirre (ASI) and Oscar Bonilla (ASI). This meeting was attended by 65 participants, from 13 HIV Units.



### New diagnostic Portfolio at Reference Laboratory and technology transfer to HIV units

In late 2017, the diagnosis of *Pneumocystis jirovecii* pneumonia was enabled at the Diagnostic Hub using a commercial PCR real time kit, FTD *Pneumocystis jirovecii*. For the first-time, patients in Guatemala have access to the diagnosis of this infection. Now this test is routinely available to all 13 HIV Units in the Fungired program.

Internal standardization of *Aspergillus* IgG antibodies was started in late 2017, using the kit from Bordier based on its superior performance. A small study to analyse the prevalence of antibodies in people living with HIV and coinfecting with tuberculosis has been done and the results are currently being evaluated.

### Cohort results

Patients with advanced HIV infection and AIDS are screened for disseminated histoplasmosis, cryptococcal meningitis, tuberculosis and non-tuberculosis mycobacteria. Additional testing is done for clinical suspicion, including PCR for *Pneumocystis*.

The results of the 2017 and 2018 cohorts are currently being evaluated. A total of 4,666 patients have been included, with 45 children. Only 143 patients were lost in follow-up. There were 716 opportunistic infections (Table 1). Patients were categorised as: (i) new cases; (ii) patients that had abandoned antiretroviral therapy for more than 90 days and now looking for care and (iii) patients on antiretroviral therapy looking for care. Importantly, the network ruled out these infections in 3,529 HIV cases, allowing an earlier start of antiretroviral therapy and therefore the chance of a better outcome.

**Table 1. Cohort 2017-2018. Opportunistic Infections**

	<b>N</b>	<b>%</b>
<b>Tuberculosis</b>	<b>249</b>	<b>34.8</b>
<b>Non-Tuberculosis Mycobacteria</b>	<b>40</b>	<b>5.6</b>
<b>Histoplasmosis</b>	<b>227</b>	<b>31.7</b>
<b>Cryptococcosis</b>	<b>138</b>	<b>19.3</b>
<b>Coinfections</b>	<b>62</b>	<b>8.7</b>

The overall incidence of opportunistic infections in the cohort is 22% but in those with less than 200 CD4/mm<sup>3</sup> increases to 33.1%. Advanced HIV disease is the norm (52%) in newly presenting people with HIV and in these, histoplasmosis is found in 7.9% followed by tuberculosis (7.1%). New diagnostic techniques like antigen detection are essential to provide correct diagnosis for opportunistic infections.

Mortality remains high despite providing early and correct diagnosis of OIs which means the need to design and implement new interventions. Liposomal amphotericin B and flucytosine are not available in Guatemala.

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