MYCO/F LYTIC VS STANDARD BLOOD CULTURES IN FUNGAL DETECTION IN PATIENTS WITH ADVANCED HIV DISEASE IN VIETNAM

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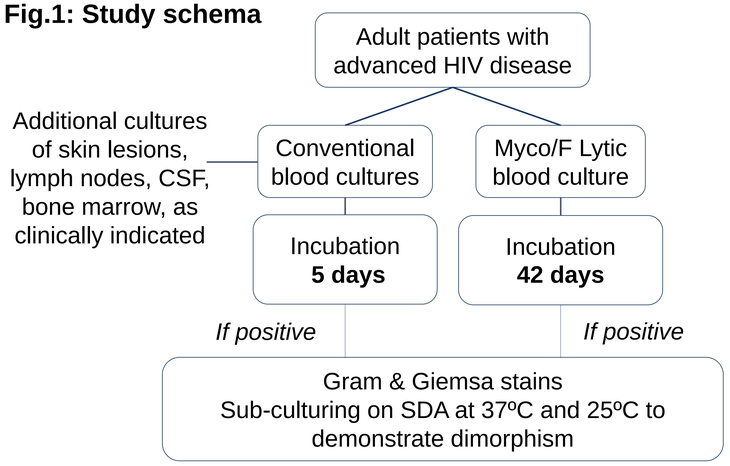
BACKGROUND

- Invasive mycoses are a major cause of death in patients with advanced HIV disease (AHD) globally. The current conventional blood culture methods miss slow-growing fungi endemic in Southeast Asia like *Talaromyces marneffei* and *Histoplasma capsulatum.*
- We report results of an on-going multi-center prospective observational study comparing the utility of Myco/F Lytic blood culture (incubated 42 days) compared to the standard BACTEC and BACT/ALERT systems in detecting invasive mycoses in hospitalized patients with AHD in northern and southern Vietnam.

METHODS

- The study was conducted at the two hospitals for tropical diseases in Hanoi and Ho Chi Minh city, Vietnam.
- Inclusion criteria:
  - Aged ≥ 18 years
  - Advanced HIV disease (CD4 count ≤ 100 cells/μL OR WHO stage III or IV disease)
  - Not on ART OR on ART ≤ 3 months OR > 12 months
  - Not on effective antifungal therapy for systemic mycoses
- Myco/F Lytic and standard blood cultures were performed for all study participants, along with cultures of other clinical specimens as ordered by treating clinicians
- The two culture methods were compared for their diagnostic yields and time to culture detection.

Fig.1: Study schema



- Invasive mycoses were diagnosed in 24.8% (121/488) of hospitalized patients with advanced HIV disease in Vietnam
- *T. marneffei* was the most common (97 cases, 80.2%), followed by *H. capsulatum* and *C. neoformans* (each 12 cases, 9.9%)
- Myco/F Lytic blood culture increased the detection yield by 41.5%

RESULTS

- A total of 488 patients were enrolled between Feb 2021 and Sep 2022

Fig.2: Fungal infections identified by the 2 culture methods

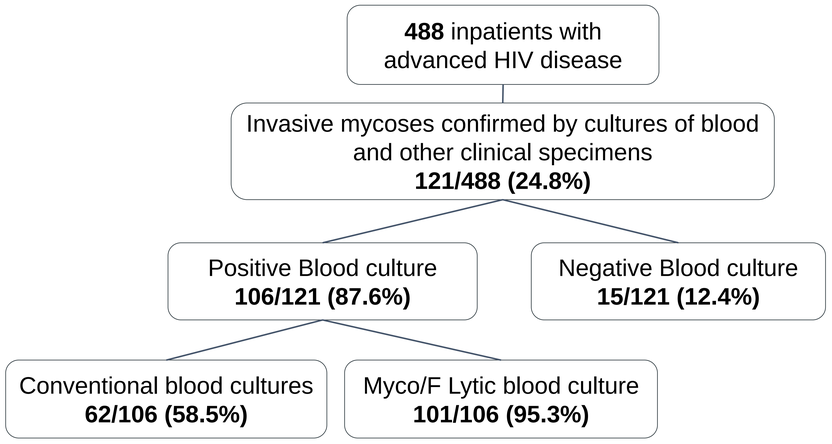
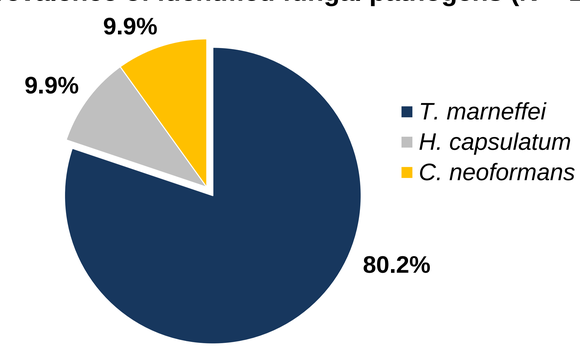


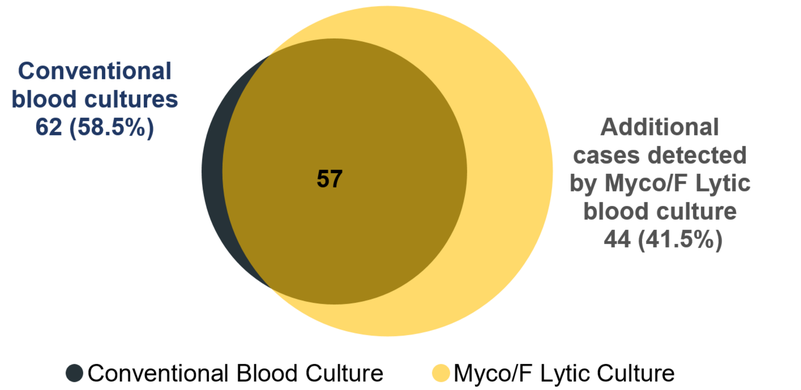
Fig.3: Prevalence of identified fungal pathogens (N = 121)



RESULTS

- Myco/F Lytic blood culture detected 44 additional cases:
  - 33 talaromycosis: median time to detection: 05 (IQR 4 – 8) days
  - 10 histoplasmosis: median time to detection: 17.5 (IQR 11.75 – 29.5) days
  - 01 cryptococcosis: 05 days
- Standard blood cultures detected 5 additional cases:
  - 2 cryptococcosis and 3 talaromycosis

Fig.4: Venn diagram of the differential fungal detection of Myco/F Lytic vs standard blood cultures



CONCLUSIONS

- Invasive mycoses is highly prevalent in hospitalized patients with AHD (121/488, 24.8%). Talaromycosis is a leading mycosis, followed by histoplasmosis and cryptococcosis.
- Myco/F Lytic blood culture added 33 additional talaromycosis, 10 histoplasmosis and 1 cryptococcosis cases (a 41.5% increase), highlighting the need to urgently implement Myco/F Lytic blood culture system into routine fungal diagnostics in Southeast Asia.

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