Burden of Opportunistic Infections and Causes of Death in Hospitalized Patients With AHD in Vietnam

983

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BACKGROUND

- Most global HIV deaths occur in hospitalized patients with advanced HIV disease (AHD), yet data on the major killers among this population are lacking.
- **Objective**: To investigate the burden of the causes of deaths and causes of opportunistic infections (OIs) in hospitalized patients with AHD in Vietnam to inform policy and intervention strategies.

METHODS

Figure 1. Study population and schema

Assess for eligibility (n = 1104)
- Hospitalized patients with AHD (CD4 < 100 cells/µL or WHO stage III - IV).
- Aged ≥ 18 years.
- Not on ART, **OR** ART ≤ 3 months, **OR** suspected failure if ART > 12 months.
- Not on effective antifungal therapy for systemic mycoses.

Excluded (203/1104, 18.4%)
- Currently on antifungal therapy (89/203, 43.8%)
- Do not fulfill inclusion criteria of ART (59/203, 29.1%)
- Unlikely to attend regular clinic visits (29/203, 14.3%)
- Unable to get informed consent (5/203, 2.5%)
- Others (21/203, 10.3%)

Enrolled (n = 901)

1. Testing for fungi: antigen tests, Myco/F Lytic culture (incubated 42 days).
2. Testing for mycobacteria: Myco/F Lytic culture, Xpert Ultra in sputum, blood, and other clinical specimens.
3. Other conventional tests: BACTEC blood culture (incubated 5 days) and standard methods to diagnose OIs based on WHO guidelines.

Lost to follow-up (11/901, 1.2%)

Follow-up over 6 months (n=890)

Mortality (218/890, 24.5%)

RESULTS

- 83% were male. Age (years) was 36 (IQR: 30-44).
- CD4 count (cells/mm^3) was 19 (IQR: 9-45).
- 847 (94.0%) had at least one OI; 439 (48.7%) had ≥ 3 OIs.
- Median time to death (days) was 26 (IQR: 11.0-58.8), 174/218 (79.8%) of deaths occurred within first 2 months.

- The **leading OIs** in hospitalized patients with AHD were: 1) **Invasive fungal infections** (505, 56.0%), 2) **Mycobacterial infections** (449, 49.8%); 3) **Severe bacterial infections** (316, 35.1%).
- The **leading causes of death** were **mycobacterial infections** (125, 13.9%), followed by **severe bacterial infections** (111, 12.3%), and **invasive fungal infections** (93, 10.3%).
- The **highest mortality** was in patients with **severe bacterial infections** (37.0%), followed by **mycobacterial infections** (29.4%), and **invasive fungal infections** (23.2%).

RESULTS

Figure 2. Prevalence of opportunistic infections, Vietnam (N=901)

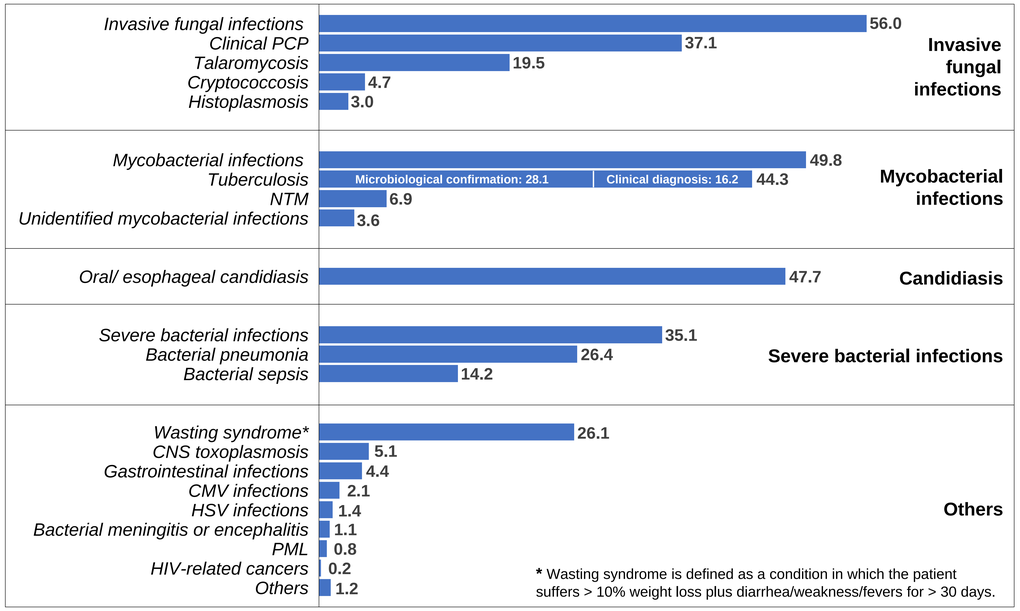
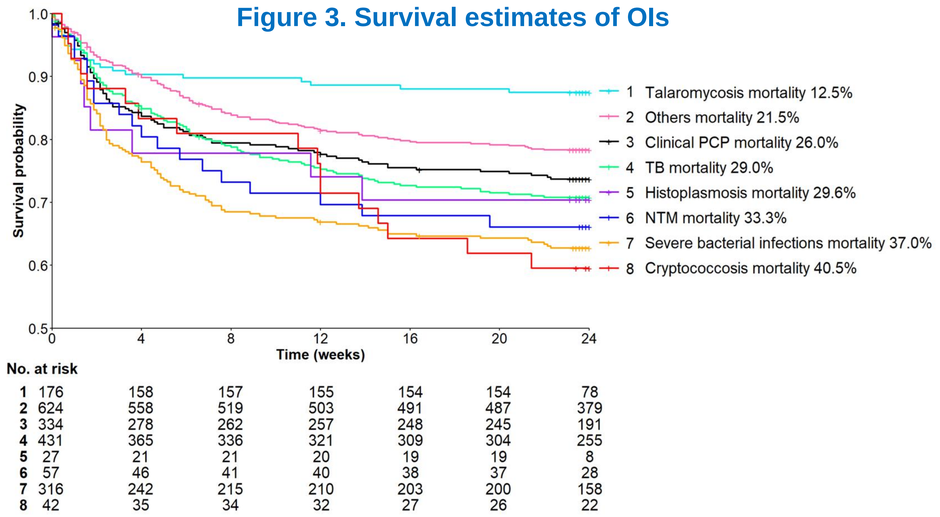


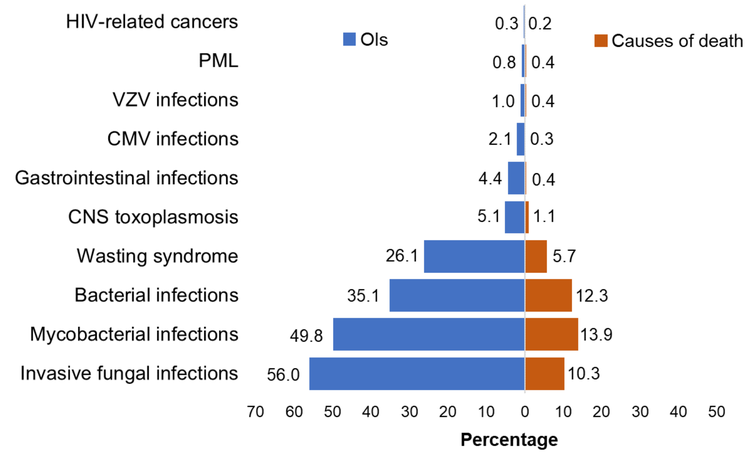
Figure 3. Survival estimates of OIs



RESULTS

Figure 4. Percentage of causes of death, Vietnam (N=901)

(All percentages were calculated with a denominator of 901)



Notes: ART: Antiretroviral therapy, PCP: Pneumocystis pneumonia, TB: Tuberculosis, NTM: Nontuberculous mycobacteria, CNS: Central nervous system; CMV: Cytomegalovirus; HSV: Herpes simplex virus, VZV: Varicella-zoster virus; PML: Progressive multifocal leukoencephalopathy.

CONCLUSIONS

- Mycobacterial, bacterial, and invasive fungal infections are the leading causes of HIV death in Vietnam, collectively claiming lives of 21.1% of hospitalized patients with AHD.
- Our data highlight the need for a package of screen and treat strategy targeting these pathogens, and post-discharge interventions to reduce AIDS mortality.

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