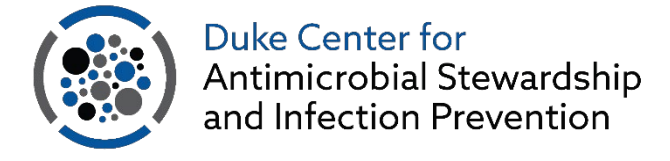


# Epidemiology of Invasive *Mycoplasma* and *Ureaplasma* Infections Early after Lung Transplantation



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## Background

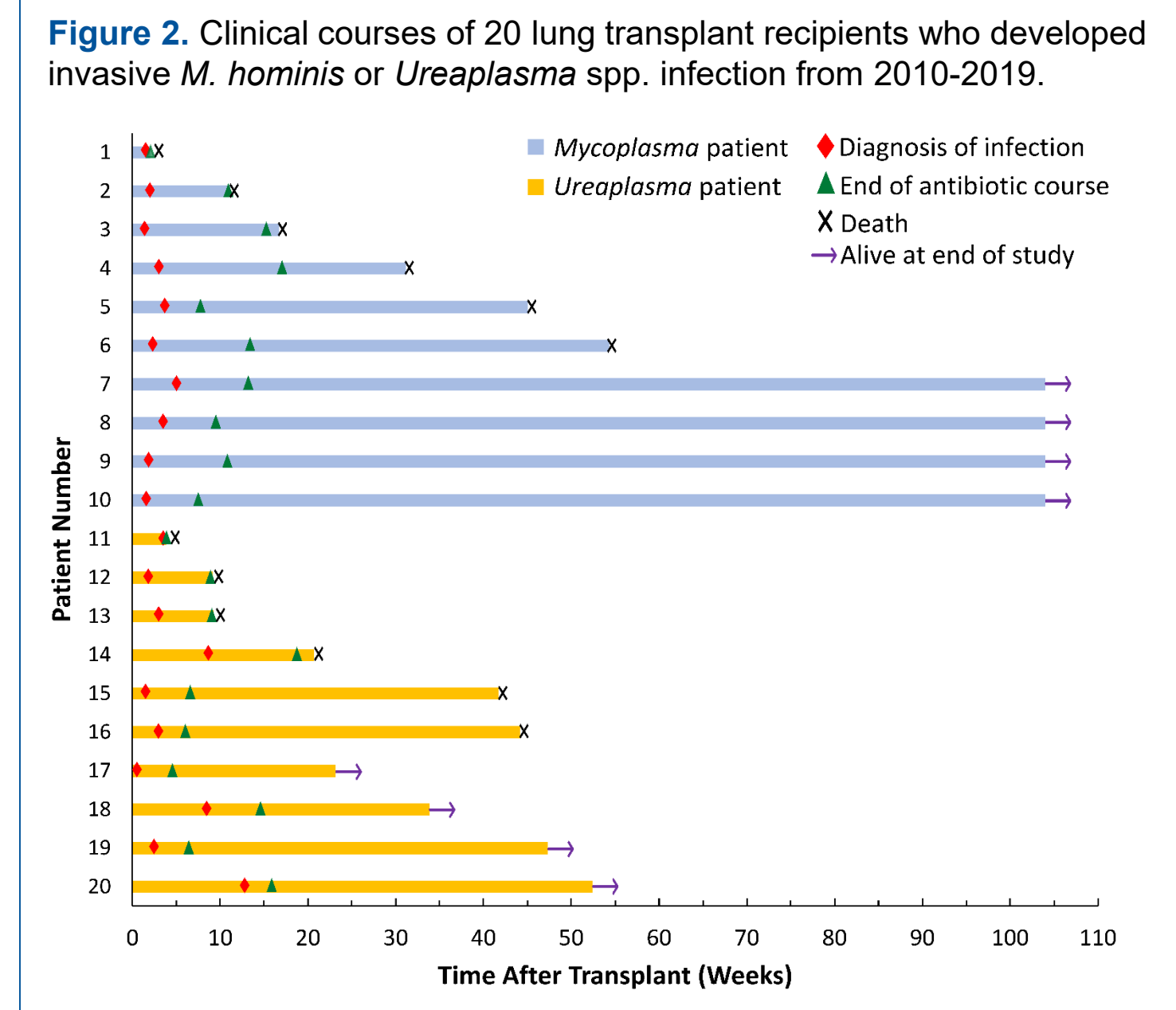
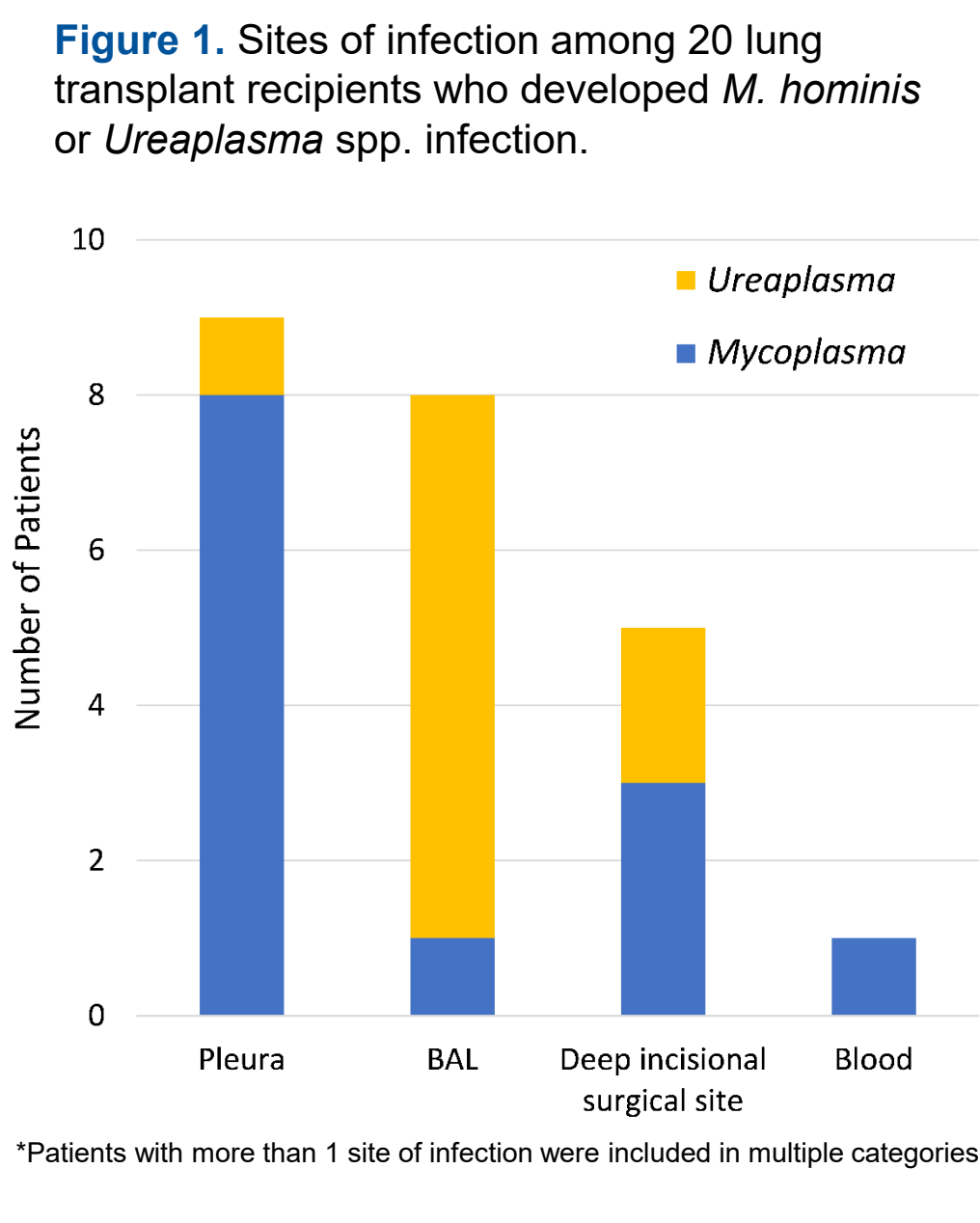
- *Mycoplasma hominis* and *Ureaplasma* species can cause invasive infections early after lung transplantation
  - Difficult to diagnose and treat
  - Associated with significant morbidity
  - Some patients develop **hyperammonemia syndrome**
    - Encephalopathy
    - Elevated plasma ammonia levels
- **OBJECTIVE:** Describe the epidemiology and clinical outcomes of these infections
  - Inform clinical management
  - Inform screening protocols for donors and recipients

## Methods

- Academic transplant center
- Lung transplant recipients: **1/2010 – 4/2019**
- Post-transplant positive culture or PCR study for *M. hominis* or *Ureaplasma* spp.
- Patients with positive urogenital studies alone were excluded
- We analyzed donor and recipient characteristics, treatment courses, and outcomes
- Follow-up period: **up to 2 years after transplant**

## Results

- **20 of 1055 (1.9%)** lung transplant recipients developed invasive infection from *M. hominis* (n=10) or *Ureaplasma* spp. (n=10)
- Median time from transplant to date of positive culture or PCR: **19 days** (range, 4-90 days)
- **13 (65%)** patients developed invasive infection **outside of the respiratory tract (Figure 1)**
- 8 (40%) patients developed altered mental status and elevated serum ammonia levels, consistent with **hyperammonemia syndrome**
  - 5 patients with *Ureaplasma* spp.
  - 3 patients with *M. hominis*
- Median duration of therapy: **6 weeks (IQR, 4-9 weeks)**
- **18 (90%)** patients received **dual antimicrobial therapy**, often including doxycycline, fluoroquinolones, and/or azithromycin
- **11 (55%)** patients **died within one year** after transplant (median death, 117 days after transplant; IQR, 65-255 days) (**Figure 2**)
- **Donor Characteristics:**
  - **15 (75%)** donors were **male**
  - Median donor age: **31 years** (range, 18-45 years)
  - **16 (80%)** donors had chest imaging consistent with **aspiration**



## Conclusions

- *M. hominis* and *Ureaplasma* spp. infections occurred early after lung transplantation, had extraparenchymal involvement, and were associated with substantial morbidity and mortality.
- Both *M. hominis* and *Ureaplasma* spp. infections were at times complicated by hyperammonemia syndrome.
- Clinicians should have low thresholds for performing specific diagnostic testing with specialized culture media or PCR.
- Protocols for lung transplant donor and recipient screening and management need to be developed.