# From Soil to Lungs: A Rare Case of Community-Acquired Acinetobacter Baumannii Pneumonia in an Avid Gardener

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## Introduction

- *Acinetobacter baumannii* is a Gram-negative, aerobic, non-motile bacterium found in soil and water.
- It is a common nosocomial pathogen, often causing hospital-acquired pneumonia with mortality rates of 30–70%.
- Community-acquired A. baumannii pneumonia (CAP-Ab) is extremely rare — only 19 cases documented in North America as of 2018.
- This case describes an elderly female who presented with fulminant fever and was later diagnosed with CAP-Ab.

## Case Report

**Patient:** 84-year-old female

**Medical History:** COPD, chronic kidney disease

**Initial Symptoms:**

- Sudden onset of fever and rigors
- Symptoms began after a chiropractor visit, worsened despite ibuprofen
- Denied travel or sick contacts, but reported frequent gardening and recent tick bites without rash

**At Presentation:**

- **Vital signs:** Temp 102°F, tachycardia, tachypnea, stable oxygen saturation on room air
- **Chest X-ray:** Unremarkable
- Blood cultures collected
- **Empiric Treatment:** IV doxycycline and ertapenem for sepsis of unknown origin

## Case Report

**Hospital Course**

- **Day 1**:
  - Blood cultures showed Gram-negative rods
  - Borrelia and Babesia serologies: Negative
- **Day 2**:
  - Developed progressive dyspnea and hypoxia
  - Oxygen support initiated
  - CT chest: Focal consolidation in the left upper lobe, consistent with pneumonia
- **Day 3**:
  - **C**linical improvement: afebrile, better oxygenation
  - Cultures identified Acinetobacter baumannii
  - Resistance panel: No ESBL, carbapenemase, or other resistance genes detected
- **Day 6**:
  - Patient clinically stable

  Discharged with PICC line for completion of 14-day IV ertapenem

## Discussion

- Community-acquired *A. baumannii* (CAP-Ab) is extremely rare — only 19 reported cases in North America as of 2018.
- This patient had no recent hospitalization, travel, or known sick contacts, suggesting a true community-acquired source.
- Gardening activity and soil exposure likely contributed, as *A. baumannii* is found in environmental reservoirs such as soil and water.
- Underlying COPD may have predisposed the patient to lower respiratory tract colonization and infection.
- Ertapenem was used empirically despite *A. baumannii*'s typical resistance. The patient improved, and cultures showed no resistance genes, supporting a non-MDR community strain.
- Emphasizes the need for early empiric broad-spectrum antibiotics, especially in elderly patients with atypical presentations.
- Clinicians should maintain a high index of suspicion for CAP-Ab in patients with environmental exposure, even when initial imaging is unremarkable.

## Conclusion

- *Acinetobacter baumannii* is a rare cause of community-acquired pneumonia (CAP), especially in elderly, immunocompromised, and COPD patients.
- This case underscores the need to include Acinetobacter species in the differential for severe CAP, even in the absence of typical healthcare-associated risk factors.
- Timely recognition, early broad-spectrum antimicrobial therapy, and supportive respiratory care are critical to improving patient outcomes.
- Empirical treatment with **ertapenem** (not first-line for A. baumannii) effective — isolate lacked typical resistance genes.
- Further research is needed to:
  - Clarify the epidemiology of CAP-Ab
  - Identify environmental risk factors
  - Define optimal treatment strategies for community-acquired infections

## References

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