

High Mortality & Relapse Rates of Melioidosis in Singapore

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Introduction

Burkholderia pseudomallei is regarded as a bioterrorism threat and a common cause of community acquired infections in the tropics. Singapore is a small urban city without paddy fields and farming land spaces, but we continue to see cases of melioidosis. We report our 10-year clinical experience of patients with melioidosis managed in Singapore General Hospital and looked at the trends in the epidemiology, clinical features and mortality.

Methods

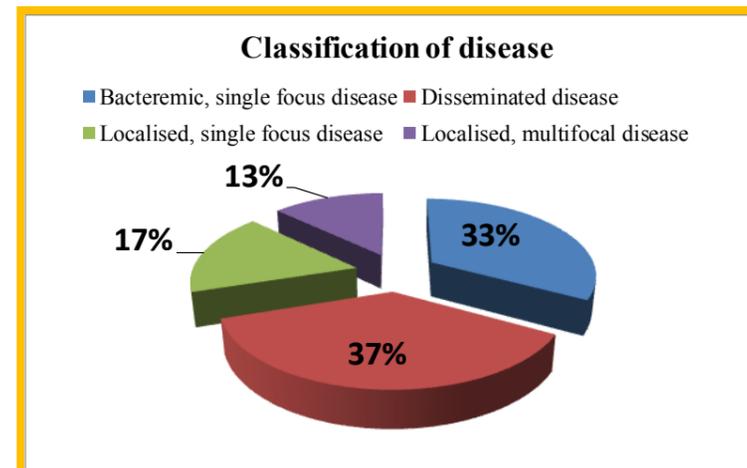
Patients with a positive culture for *B. pseudomallei* during the period **1 Jan 2001 to 31 Dec 2010** were retrospectively identified and their case records were reviewed.

Results

170 patients were identified, and most employed patients were blue-collar workers. At presentation, 51.8% of patients reported having a history of diabetes, while 16 patients were newly diagnosed with diabetes. Symptoms were acute in more than half of the patients. Most patients (70.0%) had bacteremia and multifocal pneumonia was the most common clinical presentation. Disease was severe in 22.9% of patients needing mechanical ventilation and 21.8% needed inotropic support.

All the initial *B. pseudomallei* isolates were susceptible to ceftazidime while only 1 isolate was resistant to imipenem.

| Characteristics | N=170 (%) |
|---------------------------|-------------------|
| Gender – male | 140 (82.4) |
| Mean age in years (range) | 56 (14-95) |
| Singapore Resident | 164 (96.5) |
| Comorbidities | |
| Diabetes mellitus | 104 (61.2) |
| Hypertension | 73 (42.9) |
| Dyslipidemia | 44 (25.9) |
| Ischemic heart disease | 28 (16.5) |
| Smoking history | 91 (53.4) |
| Alcohol intake | 36 (21.1) |
| Renal disease | 25 (14.7) |



| Duration of intensive therapy | Frequency (%) |
|-------------------------------|---------------|
| Less than 10 days | 22 (14.0) |
| 10 – 14 days | 18 (11.5) |
| 2 – 4 weeks | 27 (17.2) |
| 4 – 6 weeks | 55 (35.0) |
| More than 6 weeks | 34 (21.8) |

| Duration of maintenance therapy | Frequency (%) |
|---------------------------------|---------------|
| Less than 12 weeks | 25 (19.8) |
| 12 – 16 weeks | 5 (4.0) |
| 16 – 20 weeks | 19 (15.1) |
| More than 16 weeks | 77 (61.1) |

Mortality

- 44 deaths, with **28 (16.5%)** attributable to melioidosis
- 11 deaths occur before the diagnosis of melioidosis (2 of the deaths were deemed related to metastatic cancer)

Recurrence (n=142)

- **33 (23.2%)** patients had recurrent disease (22 culture proven)
- median time to recurrence was 3.2 (0.1-33.3) months
- 23 (69.7%) recurrent cases had incomplete treatment

Conclusions

Melioidosis resulted in high mortality and recurrence rates in our study and it was due to delayed diagnosis and incomplete treatment in those who survived. Our practice of using low dose cotrimoxazole in combination with doxycycline for maintenance treatment may have contributed to the high recurrence rates.

References

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2. Cheng AC, McBryde ES, Wuthiekanun V, et al. Dosing regimens of cotrimoxazole (trimethoprim-sulfamethoxazole) for melioidosis. *Antimicrobial agents and chemotherapy* 2009;53:4193-9.