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The epidemiology and outcome of young adults with community-acquired bacteremia

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Purpose
• To describe the epidemiology and outcome of young adults with community-acquired bacteremia (CAB)

Introduction
• Limited data exist on the epidemiology of CAB among young adults.
• CABs among younger adults are likely caused by risk behavior such as intravenous drug use, or by underlying comorbidity as in the elderly.
• Some CABs presumably occur among previously healthy individuals and the prognosis of these young patients is of great interest to patients and clinicians.

Methods
• We identified all first-time CABs among individuals aged 15 to 40 in Funen County, Denmark, during 2000–2008.
• Two infectious disease specialists independently reviewed patients’ electronic medical records and recorded data on patient characteristics, comorbidities, risk factors for CAB and focus of infection.
• A likely cause of CAB was based on a plausible relationship between the abovementioned factors and the isolated microorganism.
• We used the Danish Civil Registration System to retrieve data on death until 31 December 2012.
• Mortality was calculated using the Kaplan-Meier method and Cox regression analyses.

Results
• We identified a likely cause of CAB for 111/196 (57%) of the included patients; most often for patients with intravenous drug use (100%), alcohol abuse (93%), and when the focus of infection was the skin (93%), the heart (89%), or the bone and joint (75%).
• A likely cause was often apparent for Staphylococcus aureus (100%), non-hemolytic streptococci (88%) and polymicrobial bacteremia (75%).
• The four most likely causes of CAB for the five most frequent microorganisms are summarized in the Table.
• During 12 years of follow-up, 30/111 (27%) of the patients with a likely cause of CAB died opposed to only 4/85 (5%) of the patients without a likely cause (Figure).
• The unadjusted mortality rate ratio was 6.4 (95% CI, 2.3–18.2), and decreased to 3.36 (95% CI, 1.04–10.9) after adjusting for potential confounders.

Conclusion
• A likely cause of community-acquired bacteremia among young adults could be identified for little more than half the patients, and the absence hereof was associated with a very favorable outcome.

Microorganism (No.) Likely causes of community-acquired bacteremia (No.)
Staphylococcus aureus (26) Intravenous drug use (11), alcohol abuse (4), type 2 diabetes mellitus (3), congenital heart defect (2)
Escherichia coli (22) Nephrolithiasis (7), pregnancy (3), alcohol abuse (3), ureteropelvic junction stenosis (2)
Streptococcus pneumoniae (14) Asthma (4), splenectomized (3), alcohol abuse (2), dural defects of the frontal and ethmoid sinuses (1)
Polymicrobial (9) Intravenous drug use (2), alcohol abuse (2), third degree burns (1), mononucleosis (1)
Non-hemolytic streptococci (7) Congenital heart defect (3), intravenous drug use (2), teeth cleaning at dentist (1), tooth extraction (1)

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