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**Epidemiology of bacteremia after autologous hematopoietic stem cell transplantation in the absence of antibiotic prophylaxis**

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**Abstract**

Introduction: Bacterial infections are frequent complications occurring after autologous hematopoietic stem-cell transplantation (AHSCT). Herein, we identified the bacterial ecology and its antibiogram in AHSCT patients. We assessed the incidence, contributing factors and outcome of prolonged neutropenia and bacteremia post-AHSCT in the absence of antibiotic prophylaxis.

Methodology: This is a retrospective chart review of 190 adult patients who underwent AHSCT for lymphoma and multiple myeloma, between 2005 and 2015 at a Lebanese hospital.

Results: Most of the isolated bacteria originated from urine (49%) followed by blood (30%) and were mainly Gram-negative (70%). Fluoroquinolone susceptibility was 57% among Gram-negative and Gram-positive isolates. Bacteremia was documented in 12.6% of the patients, with a predominant gram-negative etiology having 95% susceptibility to fluoroquinolones. The duration of neutropenia, < or > 7 days, did not affect the incidence of bacteremia (11% vs. 14% respectively, \( p = 0.17 \)). Patients with lymphoma were more likely to have prolonged neutropenia compared to those with myeloma (\( p < 0.0001 \)). The use of a central line and the development of central-line infections were significantly higher in Gram-positive bacteremia (\( p = 0.03 \), \( p = 0.008 \) respectively). Mucositis occurred more in Gram-negative bacteremia (\( p = 0.02 \)). Total mortality rate was 3.7% in the whole population and that attributed to bacteremia was 12.5% in the bacteremia subgroup. Bacteremia was a predictor for mechanical ventilation (\( p = 0.003 \)), septic shock and mortality (\( p = 0.025 \)).

Conclusion: Since organisms causing bacteremia were still highly susceptible to fluoroquinolones and that the duration of neutropenia post-AHSCT didn't affect bacteremia, we concluded that fluoroquinolone prophylaxis is still valid yet, with close monitoring of resistance.

**Key words:** autologous; bacteremia; fluoroquinolones; hematopoietic stem cell transplantation; antibacterial prophylaxis; Lebanon.


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