Fluoroquinolones (FQ) are routinely used pre-engraftment for bloodstream infection (BSI) prevention after allogeneic hematopoietic cell transplant (HCT). Increasing rates of Gram-negative (GN) BSI and antibiotic resistance have been recently reported.

Since 2006, we have used fluoroquinolone (FQ) and Vancomycin (VAN) as pre-engraftment prophylaxis. We report trends in 1) epidemiology of BSI and 2) antibiotic resistance at our center from 2012 through 2016.

Methods

Observational study of 872 adult recipients of first allogeneic HCT at MSKCC from January 1, 2012 to December 31, 2016

BSI, defined as ≥1 positive blood culture, was categorized as Early (Day-2 to Day+30) or Late (Day+31 to Day+100)

FQ and VAN prophylaxis was started on Day-2 until neutrophil engraftment or empiric treatment for fever and neutropenia (F&N), whichever came first.

Piperacillin/tazobactam was first-line therapy for F&N; cefepime was used as alternative.

Results

Overall 102 (11.7%) patients developed GN BSI by Day+100; 66 (7.6%) patients developed Early GN BSI at a median of 6 days (range 4-9 days) after HCT.

Rates of GN BSI remained stable during the study period

Enterobacteriaceae comprised 79% of isolates in Early Period and 69% of isolates in Late Period

Conclusions

Rate of overall GN BSIs (11.7%) and during Early Period (Day-2 to Day 30) after allogeneic HCT was low (7.6%) and stable across the years of study.

Enterobacteriaceae was the most common isolate in both Early (79%) and Late Periods (69%).

The majority (80%) of Enterobacteriaceae isolated during the Early Period were resistant to fluoroquinolones while only 16% were resistant in the Late Period.

More than 30% of Enterobacteriaceae were resistant to the first-line antibiotic for fever and neutropenia.