The use of prophylactic antibiotics to prevent CLABSIs in the setting of autologous SCT is of unclear benefit. We aimed to evaluate the impact of levofloxacin prophylaxis on reducing CLABSIs in this high-risk population” Ziegler et al (2018).

Abstract:

OBJECTIVES: Patients undergoing stem cell transplant (SCT) for the treatment of hematologic malignancy are at increased risk for central line-associated bloodstream infections (CLABSIs). The use of prophylactic antibiotics to prevent CLABSIs in the setting of autologous SCT is of unclear benefit. We aimed to evaluate the impact of levofloxacin prophylaxis on reducing CLABSIs in this high-risk population.

METHODS: Patients undergoing autologous SCT at a tertiary-care hospital received levofloxacin prophylaxis from January 13, 2016 to January 12, 2017. Levofloxacin was administered from autologous SCT (day 0) until day 13, absolute neutrophil count > 500/mm3, or neutropenic fever, whichever occurred first. Clinical outcomes were compared to a baseline group who underwent autologous SCT but did not receive antibacterial prophylaxis during the previous year. The primary endpoint was incidence of CLABSIs assessed using Cox proportional hazards regression.

RESULTS: A total of 324 patients underwent autologous SCT during the entire study period, with 150 receiving levofloxacin prophylaxis during the intervention period. The rate of
CLABSI was reduced from 18.4% during the baseline period to 6.0% during the intervention period. On multivariable analysis, levofloxacin prophylaxis significantly reduced CLABSI incidence (hazard ratio (HR) 0.33; 95% confidence interval (CI) 0.16-0.69; P=0.003). There was also a reduction in the risk of neutropenic fever (odds ratio (OR) 0.23; 95% CI 0.14-0.39; P<0.001) and a trend toward a reduction in intensive-care unit transfer for sepsis (OR 0.33; 95% CI 0.09-1.24; P=0.10) in patients receiving levofloxacin prophylaxis. Notably, there was no increase in Clostridium difficile infection in the levofloxacin group (OR 0.66, 95% CI 0.29-1.49, P=0.32).

CONCLUSIONS: Levofloxacin prophylaxis was effective in reducing CLABSI and neutropenic fever in patients undergoing autologous SCT. Further studies are needed to identify specific patient groups who will benefit most from antibiotic prophylaxis.

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- CLABSI prevention bundle for adult haematological patients
- Involving patients in CLABSI reduction

Reference: