



There is a lack of data regarding the incidence and risk factors associated with the development of CLABSIs in the HCT population undergoing outpatient transplantation” McDonald et al (2018).

Abstract:

BACKGROUND: Allogeneic hematopoietic cell transplant (HCT) patients are at an increased risk of developing central line-associated bloodstream infections (CLABSIs) due to prolonged periods of myelosuppression, immunosuppression, and indwelling catheter days. CLABSIs are among the most serious complications in HCT recipients and can lead to prolonged hospitalizations, intensive care unit (ICU) admissions, lengthy antimicrobial therapies, and increased mortality. There is a lack of data regarding the incidence and risk factors associated with the development of CLABSIs in the HCT population undergoing outpatient transplantation.

METHODS: This was a single-center, retrospective analysis of adult patients who underwent allogeneic HCT between July 2012 and July 2016 in an outpatient transplant unit at a tertiary academic medical center. The primary outcome was the cumulative incidence of CLABSIs from the date of central line placement through the first 100 days post-transplantation. Secondary outcomes included risk factors for CLABSI, number of hospitalizations due to CLABSI, mortality rate at 6 months post-transplantation, and the cumulative incidence, speciation, and presence of multidrug-resistance (MDR) in identified microorganisms.

RESULTS: Three hundred fifty-nine patients underwent allogeneic HCT at Vanderbilt University Medical Center (VUMC) and 352 were included for analysis. The cumulative incidence of CLABSIs was 9%, with the majority occurring within the first 30 days post HCT (67%). The use of a matched unrelated donor (MUD) and/or haploidentical donor (OR 3.993, CI 1.329-12.001 $p=0.0136$) and use of an ablative conditioning regimen (OR 2.394, CI 1.052-5.446, $p=0.0374$) were independently associated with development of a CLABSI on multivariate analysis. The most common organism implicated in CLABSI was *Staphylococcus epidermidis* (34%). Patients who developed a CLABSI had an almost five times higher risk of mortality at 6 months post-transplantation compared to patients who did not develop a CLABSI (HR 4.932, CI 2.463-9.878, $p<0.001$).

CONCLUSIONS: There is a low incidence of CLABSIs in patients undergoing HCT in the outpatient setting. Patients who underwent HCT using a MUD or haploidentical donor and received ablative conditioning were at higher risk for developing CLABSIs. Overall mortality at 6 months post-transplantation was higher in patients who developed a CLABSI. Additional prospective studies are needed to confirm these observations.

Reference:

McDonald, M.K., Culos, K.A., Gatwood, K.S., Prow, C., Chen, H., Savani, B.N., Byrne, M., Kassim, A.A., Engelhardt, B.G., Jagasia, M. and Satyanarayana, G. (2018) Defining Incidence and Risk Factors for Catheter Associated Bloodstream Infections in an Outpatient Adult Hematopoietic Cell Transplant Program. *Biology of Blood and Marrow Transplantation*. May 9th. .

doi: 10.1016/j.bbmt.2018.04.031.

