SOHO ANNUAL MEETING 2024

Factors Influencing Cardiovascular Complications Following Hematopoietic Stem Cell Transplantation: A Single-Center Experience

M. BAKŠANSKAITĖ MD[1], D. VAITIEKUS MD[1], PhD, R. GERBUTAVIČIUS Prof. Dr.[1], K. GRINKEVIČIŪTĖ MD[2]

1. Hospital of Lithuanian University of Health Sciences Kaunas Clinics, Kaunas, Lithuania
2. Lithuanian University of Health Sciences, Kaunas, Lithuania

CONTEXT

Clinical outcomes in patients undergoing hematopoietic stem cell transplantation (HSCT) have significantly improved over the years. However, various cardiovascular (CV) complications associated with HSCT can occur during inpatient hospitalization and years after transplantation. The incidence and risk of complications of HSCT are linked to several factors, including therapies received before the transplantation process, the type of transplantation, the conditioning regimen, comorbid conditions, and the age of the patient.

OBJECTIVE

To evaluate factors that influence CV complications following HSCT.

DESIGN

Single-center retrospective analysis conducted at the Hospital of Lithuanian University of Health Sciences Kaunas Clinics in the Department of Oncology and Hematology. We selected patients who underwent HSCT between 2020 and 2023. In this study, we identified factors that influence CV complications in HSCT recipients in our center.

METHODS

Two-dimensional echocardiography was performed before and after HSCT focusing on changes in left and right ventricular and atrial sizes, ejection fraction, diastolic cardiac function, and pericardial effusion volume. Statistical analysis was performed using Chi-square and Fisher's exact tests. Possible factors influencing CV damage were identified: conditioning regimen, transplantation type, postprocedural complications (anemia and infection), age (>65 years), and comorbidities, including hypertension, chronic kidney disease, diabetes mellitus, heart failure, and coronary artery disease.

RESULTS

Between 2020 and 2023, a total of 84 patients who underwent HSCT were selected, of which 45 were men. The median age was 59 years (23-71). The number of patients undergoing autologous and allogeneic HSCT were, respectively, 71 (84.5%) and 13 (15.5%). Following HSCT, 46.4% of patients experienced significant CV changes and complications. These were identified as new-onset arrhythmias and a significant decrease in ejection fraction (>10% from baseline). Factors influencing CV complications were found to be patients' age and previous comorbidities. There was no significant correlation found between conditioning regimens or postprocedural complications and CV complications. No significant difference was found in the incidence of CV complications between autologous and allogeneic HSCT recipient groups.

CONCLUSIONS

CV complications are a common event following HSCT. In our center, the most significant factors influencing CV complications are the age of the patient and comorbid conditions.