PB2191 CENTRAL VENOUS ACCESS AND PERIPHERALLY INSERTED CENTRAL CATHETERS IN HEMATOPOIETIC STEM CELL TRANSPLANTATION: A RETROSPECTIVE COMPARISON OF POSSIBLE COMPLICATION RATES

Topic: 22. Stem cell transplantation - Clinical

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Background:

Central Venous access devices (CVAD) and peripherally inserted central catheters (PICC) are essential for the managing of patients undergoing hematopoietic stem cell transplantation (HSCT).

Aims: The aim of this retrospective study is to evaluate the risk factors and incidence of complications associated to vascular accesses in terms of catheter-related blood stream infections (CRBSI) and catheter related thrombotic complications (CRTC) in CVAD and PICC.

Methods:

A total of 127 patients, undergoing HSCT at our Hospital between January 2019 and December 2021, were analyzed. Vascular accesses were successfully inserted in all patients. As a policy of our center, the dual-lume PICC was implanted only in patients with autologous transplant. The dual-lume Broviac access was used in autologous as in allogeneic transplant. SPSS™ v22 was used to perform the descriptive analysis of the main variables using a confidence interval of 95%. The student’s t-test was used to compare the means of two independent samples assuming unequal variances.

Results:

The baseline characteristics of patients, underling disease and different phases of the HSCT are listed in table 1. The Broviac and dual-lume PICC was implanted in 85 and 42 patients, respectively. The clinical characteristics of the two cohorts are not balanced because the patient populations are different due to the different policy of the center in the use of venous devices. In fact, PICC has been used in autologous patients (93%); 38 of these were multiple myeloma patients. Broviac was placed in both allogenic (53%) and autologous (47%) HSCT. The catheter-related blood stream infections (CRBSI) occurred in 17% (n=14) and in 5% (n=2) of Broviac and PICC, respectively (p = 0.04). The different pathogens associated to CRBSI were reported in table 1. Broviac and PICC were removed for infections in 5% (n=4) and in 3% (n=1) of patients, respectively. No death for CRBSI occurred. The catheter related thrombotic complications (CRTC) was recorded only in PICC (n=7; 17%), p 0.003. None of the catheters was removed early due to thrombotic episodes. After the thrombotic episode, all patients were treated with low-molecular-weight heparin (LMWH) while the catheter remained in place; in case of PLTs <50x10^9/l low dose LMWH were used. No fatal event related to the CRTC was observed. Broviac and PICC remained without problems throughout the HSCT procedure in 91% (n=73) and 93% (n=39), respectively. Univariate analyses of variables associated to vascular complications were analyzed. A lower number of CD34 infusion (<4x10^6/Kg) resulted significantly associated to a higher incidence of PICC-CRTC, p 0.03. Mucositis was statisacally predictive of CRBSI in patients with Broviac (100% vs 80%, p 0,01). No other risk factors appear to have had a statistically significant impact.

Image:
Summary/Conclusion:

In our experience, Broviac was associated with an increased risk of bloodstream infections. Thrombotic episodes were observed in PICC. No fatal events related to CRBSI or CRTC were observed. Despite, vascular accesses remained without problems throughout the HSCT procedure. Further prospective studies and homogeneous populations are needed to confirm these data.