VIRAL INFECTIONS AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION – EXPERIENCE OF THE BONE MARROW TRANSPLANTATION CENTER TIMISOARA.

Ada Balan[1], Anca Isac[1], C. Jinca[2], Andrada Oprisoni[2], Andreea Pascalau[1], Smaranda Arghirescu[2], Margit Serban[1]

1- "Louis Turcanu" Emergency Hospital for Children Timisoara, Romania

2- "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania

Introduction: Viral diseases continue to negatively influence the outcome of allogeneic hematopoietic stem cell transplantation (HSCT). In the last years, pre-emptive therapy guided through the results of molecular monitoring, managed to reduce the incidence and severity of life-threating viral diseases. Therefore we aimed to assess the incidence and outcome of viral reactivations after allogeneic HSCT as well as the safety and efficacy of pre-emptive therapeutical approaches.

Material and methods: In a prospective study, we have consecutively included all the HSCT procedures (n=58) performed between January 2008 and December 2014 in the Bone Marrow Transplantation Center Timisoara, Romania. Antiviral prophylaxis consisted mainly of Acyclovir (n=55; 94.82%), whereas 3 patients (5.17%), considered at high-risk for CMV reactivation, received Ganciclovir (GCV) prophylactically. Quantitative RT-PCR was performed weekly or once in two weeks in peripheral blood for Herpesviridae family members (HSV1, HSV2, CMV, EBV, VZV, HHV-6 and HHV-7) and in urine for polyoma-BK. Thresholds for pre-emptive measures were the following: 500 copies/mL for CMV, 1000 copies/mL for EBV and HHV- 6, positivity of RT-PCR (100 copies/mL) for the rest of the Herpesviridae viruses and polyoma-BK.

Results: CMV was the most frequent pathogen observed, with an incidence rate of CMV reactivation of 27.58%. Results of pre-emptive therapy with GCV were the following: clearance of CMV viremia after an average time of 25 days, low recurrence rate of CMV reactivation (18.75%) and a relatively high-rate of GCV-associated neutropenia (37.5%). HHV-6 reactivation was detected in 10.34% of the HSCT procedures and responded favorably to GCV pre-emptive therapy (given due to concomitant CMV reactivation) with the exception of one patient who required administration of Foscarnet. In 13.79% of the HSCT procedures, EBV was detected through RT-PCR, all of the patients with EBV reactivation responding to reduction of immunosuppression, without concomitant administration of Rituximab. Polyoma-BK was pozitive in the urine of 19 patients (32.75%), at a mean of 43.69±36.47 days after infusion of hematopoietic stem cells, 10 of them (52.63%) developing polyoma-BK hemorrhagic cystitis. Supportive treatment resulted in clearance of polyoma-BK from urine in 89.47% of the patients with polyoma-BK viruria.

Conclusion: None of the patients included in our study developed viral diseases due to Herpesviridae family members. Although the results of our study are limited by the small sample of patients analyzed, further evidence is brought to strengthen the importance, effectiveness and safety profile of pre-emptive antiviral therapy after allogeneic HSCT.