CLONAL T CELL LARGE GRANULAR LYMPHOCYTE EXPANSION FOLLOWING HAPLOIDENTICAL HAEMATOPOIETIC STEM CELL TRANSPLANTATION IN A PATIENT WITH HODGKIN LYMPHOMA – A CASE REPORT

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Introduction: T cell large granular lymphocytes (T-LGL) expansions have been described following autologous and allogeneic haematopoietic stem cell transplantation with a low incidence, an indolent course and a distinct behavior when compared to de novo T-LGL leukaemia. There is some evidence that, even clonal expansion, may be triggered by an ethiopathogenic process involving persistent immunologic stimulation, as previously observed associations with Cytomegalovirus (CMV) infection and graft versus host disease (GVHD). To our knowledge clonal T-LGL associated with haploidentical bone marrow transplant (haplo-BMT) has not been described yet. Herein we present probably the first case of clonal T-LGL following haplo-BMT in a patient with Hodgkin lymphoma (HL).
Objective and Methods: To describe and highlight the clinical features observed on a patient with clonal TLGL expansion following haplo-BMT to relapsed HL. An eight colour flow cytometry technique was used to immunophenotype peripheral blood lymphocytes and the PCR for T cell receptor gama-delta (TCR-γδ) gene rearrangement to detect clonality.
Results: A twenty five years old, male patient post autologous relapsed classical HL (nodular sclerosis) on a third partial remission following six cycles of brentuximab vedotin rescue has undergone an haplo-BMT and post-transplant Cyclophosphamide (Cy), non myeloablative (Flu/Cy/TBI 400cGy), isogroup (O+) at July/2015. The GVHD prophylaxis consisted of tacrolimus (FK), mophetil mycophenolate and Cy. After a successful treatment of CMV reactivation at D+33 (ganciclovir) and systemic adenovirus at D+83 (cidofovir plus human immunoglobulin), this patient developed since D+85 until D+115 (last follow-up) marked and persistent lymphocytosis (range 2.9 – 5.1 x 109/L) associated with mild to moderate neutropenia (range 0.6 – 1.4 x 109/L) without any signs of GVHD or lymphoid organ involvement or autoimmunity. Patient was still using FK and donor chimerism was 100%. The peripheral blood immunophenotype demonstrated an expansion of 2.7 x 109/L (77% of total lymphocytes) CD3+/CD8+ T lymphocyte. Bone marrow lymphocyte immunophenotype revealed a similar pattern, corresponding to 65% of total lymphocytes. The CD4/CD8 ratio was 0.1 (peripheral and bone marrow) and Natural Killer cell percentage was 6.7% (peripheral) and 10% (bone marrow) of total lymphocytes. The circulating lymphocytes were positive to the TCR-γδ gene rearrengement by PCR technique. Neither the patient nor donor demonstrated lymphocytes abnormalities before transplant.
Conclusion: Clonal T-LGL expansions can occur in patients after haplo-BMT with post-transplant Cy and may be associated with other viral infections, such as adenovirus. The pathogenesis, prognosis and impact on graft versus tumor effect of this condition remains poorly defined on the literature.