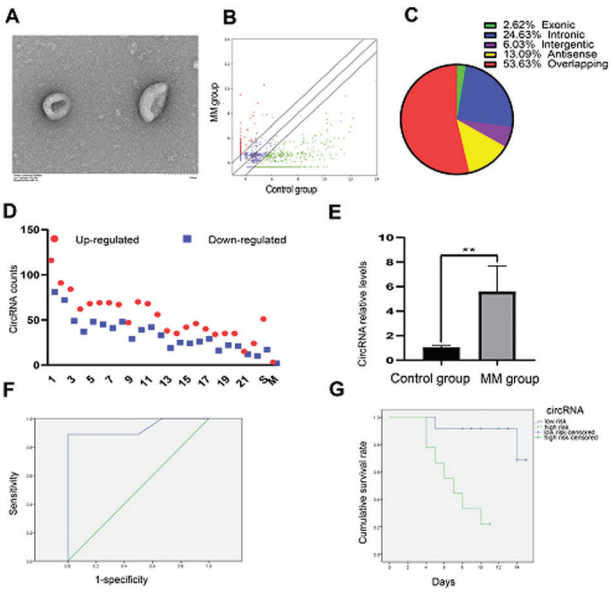

Summary/Conclusion: Exosome-derived circ-CACNG2 has the potential to be a novel independent diagnostic factor and prognostic indicator of MM-related cardiac diseases. And it may be an effective therapeutic target in the future.

EP997 AUTOLOGOUS TRANSPLANT IN MULTIPLE MYELOMA: IMPROVEMENT IN IMMEDIATE RESULTS USING NON-CRYOPRESERVED STEM CELLS

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Background: Patients with diagnosis of multiple myeloma (MM) who are candidates to receive an autologous hematopoietic stem cell transplant (Auto-HSCT) are stimulated to harvest stem cells from the peripheral blood. These cells can be either cryopreserved with Dimethyl sulfoxide (DMS) for later use or stored in liquid state at 4ºC for up to 5 days to be reinfused after a 48-hours- conditioning regimen with a total dose of 200mg/m2 of Melphalan. Potential advantages of non-cryopreserved stem cells are a decrease in apoptotic progenitors, the avoidance of DMS toxicity, and a reduction in the use of economic resources.
Aims: To compare acute complication, transfusional requirement, and time to hematologic recovery between patients with MM that receive cryopreserved (CRYO) and non-cryopreserved (non-CRYO) autologous stem cells.
Methods: Observational, retrospective trial that included pacientes with MM who received Auto-HSCT between January 2018 to January 2021 at a high complexity center.
Results: 62 pacientes received transplant on the study period. 4 were excluded due to missing important data. 21 patients received non-CRYO cells whereas 37 received CRYO products. Median age was 55±9.53 years; 59% were males. Median number of chemotherapy cycles was 6 cycles; 47% were on complete remission, 21% very good partial remission, and 33% on partial remission. Before harvesting, 52% versus 75% patients require addition of plerixafor in the non-CRYO and CRYO groups, respectively (p=0.72). The mean amount of CD34+/kg infused cells was 7.7±1.6 x106 for the non-CRYO patients versus 6.6±2.4 x106 for the CRYO group (p=0.44).
Incidence of febrile neutropenia was 61% non-CRYO vs 91% CRYO (p=0.01). There were no cases of severe sepsis nor dialysis requirements. Incidence of grade IV mucositis was 19% non-CRYO vs 45% CRYO (p=0.08). Requirement of parental nutricion was 42% non-CRYO vs 78% CRYO (p=0.01).
Platelet transfusion requirement was 10.05±10.70 units for non-CRYO and 11.68±8.27 units for the CRYO group (p=0.18). The median amount of red blood cells units was 0.67±2.22 units in the non-CRYO group versus 0.62±1.52units in the CRYO group (p=0.55).
Time in days to neutrophil recovery (>500/mm3 for 2 consecutive days) was 10.52±1.29 non-CRYO vs 12.89±2.23 CRYO (p>0.001). In the case of platelet recovery (>30.000/mm3 without transfusion in the last 3 days), it took 13.14±7.25 days non-CRYO versus 15.51±4.19 days CRYO (p<0.001). Median hospital stay was 13 ±2.55 non CRYO versus 16±4.11 CRYO (p<0.001). There were no transplant-related deaths in either group.
Summary/Conclusion: Auto-HSCT in MM using non-cryopreserved cells is a safe and effective technique associated with a decrease in febrile neutropenia incidence, lower parenteral nutrition requirement, faster hematologic recovery and shorter hospital stay, making it more cost-effective. Besides, it showed a tendency to a lower incidence of severe mucositis. There was no significant impact on transfusion requirement and on mortality associated with the transplant. Further studies are needed to evaluate long-term outcomes.

EP998 CLINICAL VALUE OF MINIMAL RESIDUAL DISEASE ASSESSED BY MULTIPARAMETER FLOW CYTOMETRY IN AMYLOID LIGHT CHAIN AMYLOIDOSIS

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Background: Amyloid light chain (AL) amyloidosis, as a clonal plasma cell disorder, is characterized by organ dysfunction secondary to deposition of misfolded monoclonal light chains and most commonly involves the heart, kidney, and liver. AL amyloidosis is typically associated with a lower indolent clonal plasma cell burden within the bone marrow than multiple myeloma (MM). However, even low levels of unstable light chains secreted by these plasma cells can deposit in organs, resulting in organ dysfunction. Thus, the treatment of the disease aims to target the plasma cell clone and completely eliminate toxic light chain production. With the development of novel therapies, deep responses, as assessed by serum- or urine-based methods such as immunofixation electrophoresis and free light chain (FLC) quantification, can be achieved in a significant proportion of patients with AL amyloidosis. However, there are several limitations inherent to FLC assays and immunofixation electrophoresis. Hematologic relapses still occur, and organ function may continue to deteriorate due to small residual clones. The small amounts of light chains produced by these plasma clones may not be detectable by conventional techniques. In MM, multiparameter flow cytometry (MFC) is being used to detect the presence of minimal residual disease (MRD), and the absence of detectable MRD has been associated with improved survival outcomes across different therapeutic regimens and lines of therapy. Such data are sparse in patients with AL amyloidosis. Some studies have shown that the absence of MRD detected by MFC is associated with superior outcomes in patients with AL amyloidosis, but these studies have limitations given the heterogeneity of patients tested and the lack of predefined time points for MRD assessment.
Aims: To assess the feasibility and prognostic value of minimal residual disease (MRD) evaluated by multiparameter flow cytometry (MFC) in newly diagnosed amyloid light chain (AL) amyloidosis patients.
Methods: Clinical data from 25 consecutive newly diagnosed AL amyloidosis patients with MRD data tested 3 months after first-line therapy completion were retrospectively analyzed in a single center from 2012 to 2019. First-line therapy included 8 courses of VD or 4 courses of VD and sequential autologous stem cell transplantation (ASCT), both without maintenance therapy.
Results: Of 25 patients with very good partial response (VGPR) or better, 19 (76%) achieved MRD negativity. There were no differences in baseline characteristics between MRD-negative and MRD-positive patients. More ASCT patients than non-ASCT patients (90.0% vs 53.3%, P=0.043) achieved MRD negativity. In the MRD-negative and MRD-positive groups, renal response was observed in 82% vs 50% (P=0.116), cardiac response in 93% vs 25% (P=0.019), liver response in 100% vs 50% (p=0.286), and any organ response in 94% vs 50% (P=0.023) of patients. At a median follow-up of 25.1 months, MRD-negative patients showed significantly longer progression-free survival (PFS) from diagnosis than MRD-positive patients (24.52 vs 76.39 months, P= 0.004) (Figure 1).