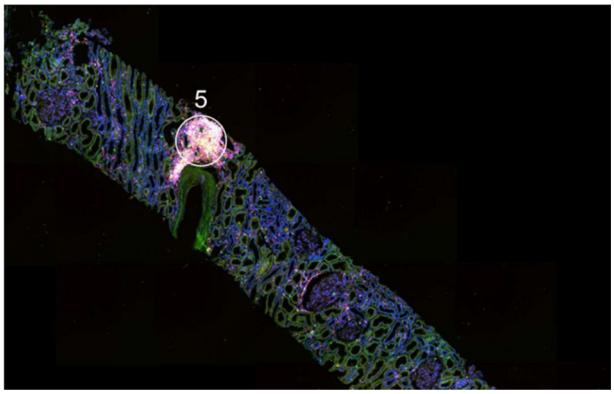
serum creatinine of 1.59 mg/dl and a median urinary protein excretion of 17 g/moL creatinine. Patients had absent *in vitro* lymphocyte reactivity against stimulatory donor blood cells while reactivity against third party cells was preserved as an indication of continued donor-specific unresponsiveness. $CD19^{+}CD24^{hi}CD38^{hi}$ and $IL10^{+}CD19^{+}CD24^{hi}CD38^{hi}$ Breg were with 2.2/μl and 1.0/μl, respectively, strikingly higher than the 0.0/μl ($P < 0.001$) and 0.0/μl ($P < 0.001$) in transplanted controls and in the range of the numbers of healthy individuals ($N = 34$: 2.4/μl, $P = 0.73$, and 0.8/μl, $P = 0.60$). In addition, significantly higher Breg numbers were found for $CD1d^{+}$ ($P = 0.0071$), $CD19^{+}CD38^{+}CD147^{+}CD1d^{+}$ ($P = 0.0071$), $CD19^{+}CD25^{+}$ ($P = 0.0077$), $CD19^{+}CD25^{+}CD73^{+}CD71^{+}$ ($P = 0.013$), $CD19^{+}CD25^{+}CD73^{-}CD71^{+}$ ($P = 0.0011$), $CD19^{+}CD24^{hi}CD27^{+}$ memory ($P = 0.029$), and $IL10^{+}CD19^{+}CD24^{hi}CD27^{+}$ memory Breg ($P = 0.042$).
Conclusion: Donor-specific immunosuppression after MIC infusion is long-lasting and is associated with a striking increase in Breg at various stages of B cell development, including memory Breg.

OP281 CHARACTERISATION OF DISTINCT GRAFT INFILTRATES FOLLOWING REGULATORY T CELL THERAPY IN KIDNEY TRANSPLANT RECIPIENTS

Matthew Brook[1,2], Ian Roberts[2], Joanna Hester[1], Paul Harden[2], William Mulley[3], Fadi Issa[1]
[1]University of Oxford, Nuffield Department of Surgical Sciences, Oxford, United Kingdom; [2]Oxford University Hospitals NHS Foundation Trust, Oxford Transplant Centre, Oxford, United Kingdom; [3]Monash Health, Melbourne, Australia

Background: Regulatory T cell therapy is an emerging treatment in the field of clinical transplantation with the potential to improve short and long-term transplant outcomes. A critical aspect of these studies is generating an understanding of how infused regulatory T cells impact on the recipient immune response to alloantigen including within the graft.
Methods: 8 Patients receiving regulatory T cell infusion as part of a phase 1 clinical trial underwent a protocol biopsy at 8 months post-transplant. Observed immune infiltrates were compared with those from patients experiencing an acute cell mediated rejection episode and infiltrates seen in routine surveillance biopsies from patients with clinically stable graft function. Biopsies were analysed by routine immunohistochemistry. NanoString GeoMX digital spatial profiling of protein and mRNA expression was performed to greater characterise immune infiltrates.
Results: Routine histology demonstrated the presence of unique cellular infiltrates in all patients treated with regulatory T cells that were dense and remarkably focal in nature. 4 colour immunofluorescence (figure) demonstrated such infiltrates contain a greater proportion of CD4+ FOXP3+ cells than infiltrates seen in patients experiencing a rejection episode (4.45% Vs 1.6%, $P < 0.001$). Principle component analysis revealed that protein expression and RNA expression patterns clearly demonstrate distinct infiltrates in rejection Vs cell therapy biopsies. Further interrogation revealed significantly different expression of cell markers such as CD3, CD45, CD14, CD68 and CD20 as well as functional markers such as Ki67, Granzyme B, CXCL9 and CXCL10 in infiltrates noted in biopsies from patients receiving cell therapy compared to those from patients experiencing a rejection episode and surveillance biopsies in patients with stable graft function.
Conclusions: Infiltrates from patients treated with cell therapy demonstrate elevated FOXP3 expression and a more quiescent or tolerant microenvironment than seen in infiltrates associated with rejection raising the possibility of regulatory T cells mediating intra-graft immune regulation. We demonstrate that infiltrates in all three clinical scenarios demonstrate unique properties and represent distinct cell populations.



OP282 LONG TERM FOLLOW-UP OF LIVER TRANSPLANT RECIPIENTS AFTER ALLOGENEIC MESENCHYMAL STROMAL CELL INFUSION

Morgan Vandermeulen[1], Maleyko Mohamed Wais[1], Marie Hélène Delbouille[1], Gianni Maggipinto[2], Yves Beguin[3], Olivier Detry[1]
[1]University of Liege Hospital (ULiege CHU), Dpt of Abdominal Surgery and Transplantation, Liege, Belgium; [2]University of Liege Hospital (ULiege CHU), Division of Immuno-Hematology, Liege, Belgium; [3]University of Liege Hospital (ULiege CHU), Department of Haematology, Liege, Belgium

Background: Some properties of mesenchymal stromal cells (MSCs) might be particularly of interest after organ transplantation. The authors aimed to report herein the long-term results of their first-in man, prospective, controlled, phase-1 study evaluating the safety of a single third-party MSC infusion after liver transplantation (LT).
Methods: Ten liver transplant recipients under standard immunosuppression received 1.5–3 $\times$ 10^{6}/kg unrelated third-party MSCs on post-operative day 3 $\pm$ 2 and were prospectively compared to a control group of 10 liver transplant recipients. Primary endpoints were set to prospectively detect potential delayed side effects of MSC infusion, and particularly occurrence of infections and cancers. As secondary endpoints, liver graft- and patient survivals, graft rejection and function, occurrence of bile duct complications, and development of anti-HLA antibodies against liver- or MSC-donors were studied.
Results: There was no difference in overall rates of infection or cancer at 5 years of follow-up between the two groups. There was also no difference in liver graft- and patient survivals, graft rejection, blood liver tests or occurrence of bile duct complications. The prevalence of de novo liver DSA related to HLA-mismatches was two times higher in the MSC group compared to the control group. Three patients of the MSC group (30%) developed at least 1 de novo HLA antibody against MSC-donor. All the de novo class II HLA antibodies against MSC were linked to a shared HLA mismatch between the liver and MSC donors and 75% of HLA class II shared-mismatches led to de novo HLA antibodies.
Conclusions: This long-term follow-up confirms the safety of one single MSC infusion after LT. The potential interesting effects of MSC need to be confirmed by prospective studies. The development of anti-HLA antibodies against MSC donor should be further evaluated especially in case of shared HLAmismatchesbetween graft- and MSC-donors, despite the fact that no deleterious effect could be detected.

REDUCING THE THREAT OF INFECTIOUS AND CARDIOVASCULAR DISEASE AFTER TRANSPLANTATION

OP323 MAJOR ADVERSE CARDIOVASCULAR EVENTS (MACE) AFTER KIDNEY TRANSPLANTATION: A POPULATION-COHORT ANALYSIS OF ENGLISH TRANSPLANT CENTRES

Benjamin Anderson[1], Felicity Evison[1], Suzy Gallier[1], Adnan Sharif[2,3]
[1]Queen Elizabeth Hospital Birmingham, Health Informatics, Birmingham, United Kingdom; [2]Queen Elizabeth Hospital Birmingham, Nephrology and Transplantation, Birmingham, United Kingdom; [3]University of Birmingham, Institute of Immunology and Immunotherapy, Birmingham, United Kingdom

Background: MACE rates within the first year after kidney transplantation in North American centres are reported at between 7.0% and 8.7% but data from European cohorts are lacking. The aim of this population-cohort analysis was to determine MACE rates within the first year after kidney transplantation in England.
Methodology: We obtained data for kidney transplant procedures performed in England between 1st April 2002 and 31st March 2018. Data were extracted from Hospital Episode Statistics using administrative ICD-10 and OPCS-4 codes, with linkage to the national death registry. We excluded age ≤18, repeat transplant in same period, multi-organ transplant and residence outside England. MACE was defined as any hospital admissions with myocardial infarction, stroke, unstable angina, heart failure, any coronary revascularisation procedure and/or any cardiovascular-related death. Univariable/multivariable logistical regression analyses were conducted to investigate the odds for MACE after kidney transplantation.
Results: Our study cohort comprised of 30,325 kidney transplant recipients. MACE events occurred in 781 patients within the first-year post-transplantation (2.6% of all kidney transplant procedures). Of these events, 201 occurred during the index admission for surgery (representing 25.7% of first-year MACE events and 0.7% of all kidney transplant procedures). Predictors of long-term mortality were age, non-White ethnicity, socio-economic deprivation, deceased donor, pre-existing diabetes, increased Charlson score, previous cardiac history and MACE within the first year (HR 2.59; 95% CI 2.34-2.88, $P < 0.001$). Patients who suffered a non-fatal MACE within the first year had 1-, 3-, 5- and 10-year patient survival of 80.5%,