Cardiovascular Pathology **Included with On Demand**

Correlation of ISHLT Grading for Cellular and Antibody Mediated Rejection with Heart Allograft Survival: a Retrospective Observational Study

Mon, March 13

CC Room 225

Part of:
Platform - Monday PM - Cardiovascular Pathology

Info

Information regarding this session is limited as it requires a ticket be purchased.
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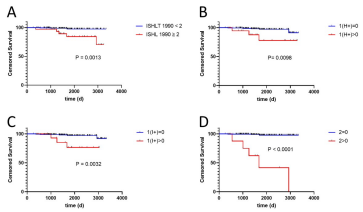
Background:
The International Society for Heart and Lung Transplantation (ISHLT) has developed standardized grading systems for the evaluation of allograft biopsies for cellular and antibody-mediated rejection. Controversy still exists concerning how these scores should be used to guide patient care. To better understand the significance of biopsy findings for patient allograft outcomes we analyzed the association between ISHLT grading and allograft survival.

Design:
Clinical information was collected on 204 patients who received first heart transplants and no other solid organ or stem cell/bone marrow transplants between 1/1/2013 and 3/29/2021. Cellular rejection (pCMR) was graded using both ISHLT 1990 and 2004 criteria. Patients who had immunostaining for C4d +/- C3d were assigned pathologic antibody-mediated rejection (pAMR) scores. CD68 staining was not used to assess immunopathologic pAMR, since this is considered to be a redundant measure of histologic AMR. Statistical analyses were performed to evaluate the influence of histopathologic scores on allograft survival.

Results:

Seven patients (3.5%) lost their graft between 13 and 86 days post-transplant due to primary graft dysfunction. For the remaining 197 patients (3243 biopsies, mean 16 and range 4 – 29 biopsies per patient) we evaluated associations between histopathologic parameters and graft outcomes (mean follow-up 5 years, range 256 – 3351 days). 165 patients (81%) had staining for C4d +/- C3d (753 biopsies) and were assigned pAMR scores. Factors that significantly associated with allograft survival include: pCMR greater than 1R by ISHLT 2004 (p=0.005), pCMR greater than 1B by ISHLT 1990 criteria (p=0.0013), histologic AMR (pAMR1(H+), p=0.0098), immunopathologic AMR (pAMR1(I+), p=0.0032) and combined histologic and immunopathologic pAMR (pAMR2, p <0.0001, median survival 4.6 years) (Figure 1.A-D).

Figure 1:



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Conclusion:

Our results support ongoing use of the 1990 scoring system for cellular rejection to identify ISHLT 1990 grade 2 rejection in patients, who may benefit from closer follow-up or increased immunosuppression. Our results also demonstrate that pAMR1(H+), pAMR1(I+) and pAMR2 are associated with poor graft survival, supporting intervention for all grades of pAMR.

Disclosures:

Liang Lu: None; Kelly Smith: None

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