NON-HLA ANTIBODIES AND THEIR ROLE IN SOLID ORGAN TRANSPLANTS

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Background: Non-HLA antibodies have recently begun to be suspected of playing a role in antibody-mediated rejection and graft survival.

In the absence of any donor specific HLA antibodies (DSA) in the recipient, antibody mediated rejection (ABMR) may be caused by non-HLA antibodies

Eg:Angiotensin II Type 1 receptor (AT1R), Endothelial-1 Type A receptors (ETARs) etc.

Non-HLA antibodies can be ***alloantibodies, or auto antibodies .***

We report 7 such cases where the clinical suspicion was targeted towards non-HLA antibodies and the immunological findings.

Methods:

1. On suspecting ABMR, the physicians requested non-HLA antibody testing.

2.The test was done on the patient's serum **using the *luminex bead based assay by Lifecodes for non-HLA antibodies*.**

3. It covers 60 antigens and detects IgG antibodies against them.

4.Results, expressed as ***mean fluorescence intensity (MFI) were analysed using the accompanying Match It!*** Software.

5.The cases were encountered over 2 years (October 2022- September 2024).

Results:

- Of the 7 cases, M:F ratio was 4:3, Age range- 30 - 48 years.
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- Relationship of Donors with recipient- cadaver:3 , mother:2, husband:1 and father-in- law:1.
- H/O previous transplant was present in 1 case.
- **Pre-transplant testing was unremarkable in all cases. However, post- transplant, all cases presented with features S/O graft rejection and in view of absence of donor specific antibodies, non-HLA antibody screening was requested.**
- **Test was negative in 2 cases** (no H/O transplant, Pre-transplant cross-match[CXM] and single antigen bead [SAB] assay for HLA antibodies- negative in both cases).

Sl. No	History	Non Hla Test Result
1	1st Tx ,Pre Tx CXM & LMX Neg Symptoms started 2 months after Tx	Non-HLA antibodies were positive, 4 antibodies with MFIs between 3000 - 6500). **(LMNA – 6373)**
2	1st Tx, pre-Tx CXM- negative. Symptoms started 1 week after transplant	Non-HLA antibodies were positive ,1 antibody **IL21 - MFI - 1319**
3	2nd Tx, pre-transplant CXM- negative. Despite positive SAB, the antibodies were not donor specific. So the Tx was performed. Symptoms started 2 months after Tx SAB was positive.	Non-HLA antibodies were also positive >20 antibodies with MFIs between 1000 and 13200. **(PRKCZ -13150)**
4	1st TX, pre-Tx CXM- negative. Symptoms started 1 week after Tx SAB Positive	Non-HLA antibodies were positive >15 antibodies with MFIs between 1000 – 4000. **(PLA2R1 – 3817)**
5	1st Tx, pre-Tx CXM- negative. Symptoms started 4 months after Tx	Non-HLA antibodies were positive, 10 antibodies with MFIs between 1000 and 5000. **(IFNG – 4782)**

Conclusion: Understanding and managing the role of non-HLA antibodies in transplantation is an evolving field, with ongoing research aimed at improving transplant outcomes through better screening and treatment strategies. Detection and monitoring are essential for improving long-term graft survival and ensuring more personalized care for transplant patients.