

Summary of heart review

1. Sources of error in biopsies.
2. The true disease stage is a latent variable.
3. Summary of the MMDX approach.
4. Molecular biology of rejection.
5. Developing the heart MMDx-heart report
 - a. 3 archetype model
 - b. 4 archetype model
 - c. current report
 - d. what lies beneath: subtle ABMR
 - e. ABMR is a relatively benign short term; TCMR is very damaging
 - f. function correlates with injury recent and atrophy fibrosis
6. injury archetype groups indicate a severe injury and late injury group
 - a. survival post biopsy correlates with injury even when rejection is eliminated
 - b. TCMR causes severe and late injury; ABMR slowly produces late injury; relatively little early effect on parenchyma

Key References

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3. Halloran PF, Madill-Thomsen KS, Aliabadi-Zuckermann A, Cadeiras M, Crespo-Leiro M, DePasquale E, et al. Many heart transplant biopsies currently diagnosed as no rejection have mild molecular antibody-mediated rejection-related changes *Journal of Heart and Lung Transplantation*. 2021;2021 Aug 26:S1053-2498(21)02458-X. doi: 10.1016/j.healun.2021.08.004. Epub ahead of print.
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5. Halloran PF, Reeve J, Aliabadi AZ, Cadeiras M, Crespo-Leiro MG, Deng M, et al. Exploring the cardiac response to injury in heart transplant biopsies. *JCI Insight*. 2018;3(20):e123674.
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