**Alemtuzumab Induction vs. Conventional Immunosuppression in Heart Transplant Recipients**

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**BACKGROUND**

- Induction therapy is a strategy for reducing the risk of allograft rejection and immunosuppression-related toxicities in orthotopic heart transplant (OHT) recipients.
- The use of induction in OHT ranges between 62%-83%.
- Alemtuzumab is a humanized rat monoclonal antibody directed against the CD52 antigen on B and T lymphocytes.
- A few small studies in OHT recipients have demonstrated lower rates of rejection, reduced doses of concomitant immunosuppressants, and less steroid use.
- The benefits and risks of alemtuzumab induction in OHT recipients at the University of Maryland Medical Center (UMMC) remains uncertain.

**PURPOSE**

The purpose of this study was to evaluate whether alemtuzumab induction confers a lower risk of rejection compared to standard immunosuppression in OHT recipients with at least one year of follow-up.

**OVERVIEW OF STUDY METHODS**

- **Inclusion Criteria**
  - Aged 18-89 years
  - Received alemtuzumab induction or conventional immunosuppression
- **Exclusion Criteria**
  - Re-transplanted patients
  - Multi-organ transplant
  - Induction with an agent other than alemtuzumab

**RESULTS**

- **Patient Characteristics**
  - **Control Group**
    - Mean age: 57.6 (SD 12.8)
    - Gender: Male (n=35), Female (n=15)
    - Race: White (n=24), Black (n=1)
  - **Alemtuzumab Group**
    - Mean age: 55.1 (SD 13.6)
    - Gender: Male (n=23), Female (n=20)
    - Race: White (n=15), Black (n=3)

- **Freedom from Grade ≥2 Rejection at 12 Months**
  - **Control Group**
    - Mean time: 361.2 days
  - **Alemtuzumab Group**
    - Mean time: 310.4 days

- **Change in Renal Function Over Time**

**CONCLUSIONS**

- Induction therapy with alemtuzumab appeared to prolong freedom from grade ≥2 rejection compared to standard immunosuppression.
- Alemtuzumab was associated with a numeric but not statistically significant reduction in the number of grade ≥2 rejections, contrasting with prior studies.
- Induction with alemtuzumab appeared to preserve renal function without increasing rates of neutropenia or infectious complications.
- Renal preservation may be attributable to decreased tacrolimus concentrations in the induction group.
- Similar to earlier studies, the results suggest that lower mycophenolate dosages and tacrolimus goals may be used with alemtuzumab induction.

**REFERENCES & DISCLOSURES**

None of the investigators involved in this study have any financial or non-financial relationships to disclose. We reference the following publications in this report:


**Abbreviations**

- CKD: chronic kidney disease
- GFR: glomerular filtration rate
- R: recipient
- VAD: ventricular assist device
- ANC: absolute neutrophil count
- WBC: white blood cells

**Select Differences at 12 Months**

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<th>Parameter</th>
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<th>Alemtuzumab Group</th>
<th>p-value</th>
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**Change in Renal Function Over Time**

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