SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Immunosuppression Regimen and Risk of Posttransplant Diabetes Among Older Kidney Transplant Recipients

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Background

- Posttransplant diabetes mellitus (PTDM) is a serious and common complication following solid organ transplant, generally occurring within the first 2–3 years after transplant.
- Despite efforts to prevent PTDM, it occurs in up to 10%-20% of nondiabetic kidney transplant (KTx) recipients and is associated with premature cardiovascular disease, graft loss, and mortality.
- KTx recipients have a 1.5-fold higher risk per decade of age of developing PTDM.
- Recent evidence from our team suggests that lower-intensity immunosuppression (Isx) regimens (eg, steroid-sparing) appear beneficial in older KTx recipients, reducing posttransplant death and graft loss.

Objective

- We specifically evaluate the risk of PTDM among older KTx recipients using a unique data set linking clinical registry data and healthcare claims.

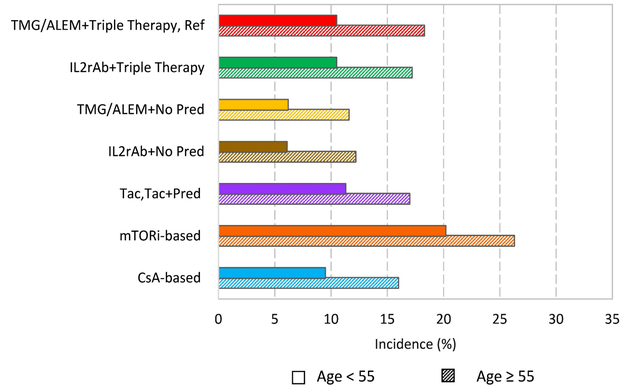
Study Design

- We linked data from the Scientific Registry of Transplant Recipients (SRTR) and Medicare claims (2005-2016) to identify PTDM among KTx recipients without pretransplant diabetes.
- We used multivariate Cox regression to compare the incidence of PTDM by ISx regimen with the reference regimen Thymoglobulin (TMG) or Alemtuzumab (ALEM) with Tacrolimus[Tac]+mycophenolic acid[MPA]+prednisone[Pred] using inverse propensity weighting.

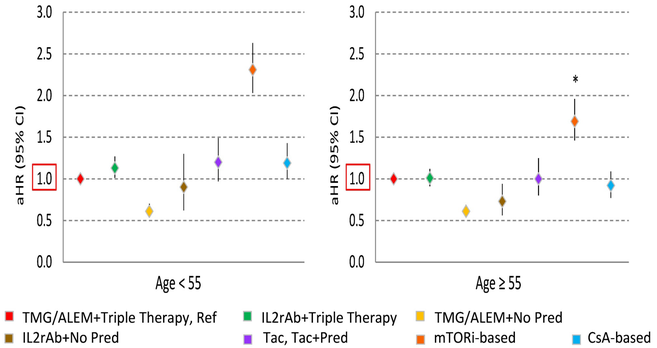
Results

- Among 40,108 KTx recipients, 12.7% developed PTDM, with higher incidences in older (≥55 years vs. <55 years: 16.7% vs. 10.1%) patients.
- The incidence of PTDM was lower with steroid avoidance [TMG/ALEM + No Pred (8.4%), and IL2rAb+ No Pred (9.7%)] than TMG/ALEM with triple therapy (13.1%).

Incidence of PTDM by Age



Adjusted risk of PTDM by Age



Results (Cont.)

- After adjustment for donor and recipient characteristics, TMG/ALEM with steroid avoidance was beneficial for all groups:
  - Age< 55: aHR $_{0.54}0.61_{0.70}$
  - Age ≥55 aHR $_{0.54}0.61_{0.69}$
- However, IL2rAb with steroid avoidance was beneficial only for older patients (aHR $_{0.56}0.73_{0.94}$)

Conclusion

- The beneficial impact of steroid avoidance using Tac on PTDM differed by patient risk and induction regimen.
- Steroid-free ISx is associated with a lower risk of PTDM. This benefit was confirmed for older adults.
- Risk of nonimmune complications should be considered along with rejection risk when considering ISx regimen choice in older KTx recipients.

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