

HbA1c Does Not Predict Lower Extremity Amputation Risk in Patients with End Stage Renal Disease on Hemodialysis

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Background

The problem with HbA1c in ESRD-HD

Why HbA1c is unreliable in this population:

- Anemia
- Accelerated RBC turnover
- Uremia
- Protein-kcal wasting
- EPO, transfusions, iron replacement tx

HbA1c values may be deceptively low

masking true glycemic burden

This is the first study to rigorously examine HbA1c's predictive value for LEA in pts with ESRD-HD

Results

✗ HbA1c does NOT independently predict LEA

Adjusted models → not significant

HbA1c values did not reliably distinguish who would get a LEA

Results

✗ HbA1c does NOT improve LEA risk prediction

HbA1c → AUC 0.72

DM → AUC 0.73

Knowing HbA1c didn't improve our ability to predict LEA beyond knowing if the pt had DM

Discussion

⊘ Do NOT rely on HbA1c alone

false reassurance → delays limb salvage interventions in pts who are actually at high risk for limb loss

✓ Early, multidisciplinary limb salvage + multifactorial risk assessment

Earlier multidisciplinary engagement = better limb salvage outcomes

Background

The issue with the 7% threshold

Most guidelines use HbA1c < 7% as a measure of "good glycemic control"

But in our ESRD-HD pts: 62% of all LEA occurred in those with HbA1c < 7%

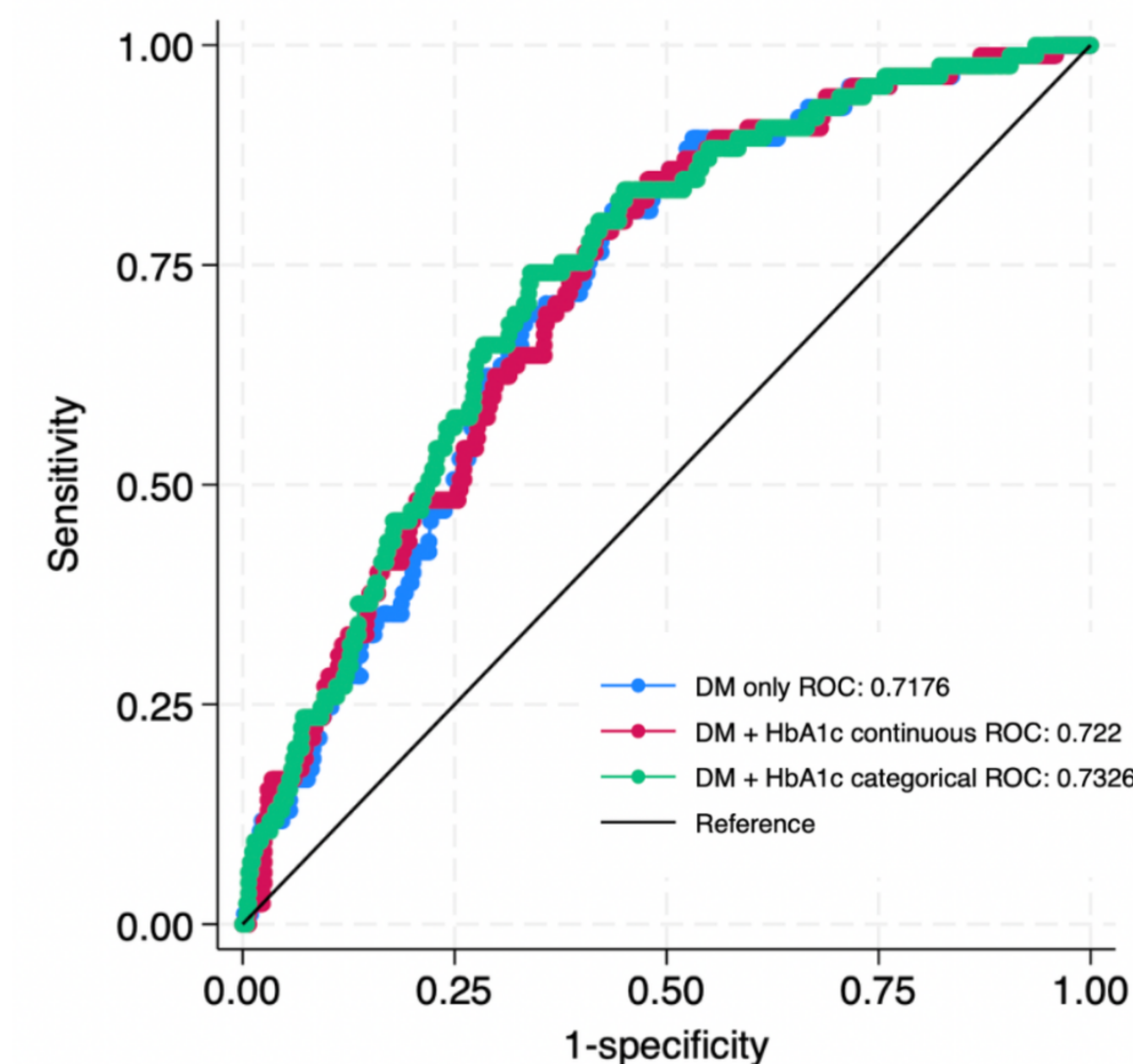
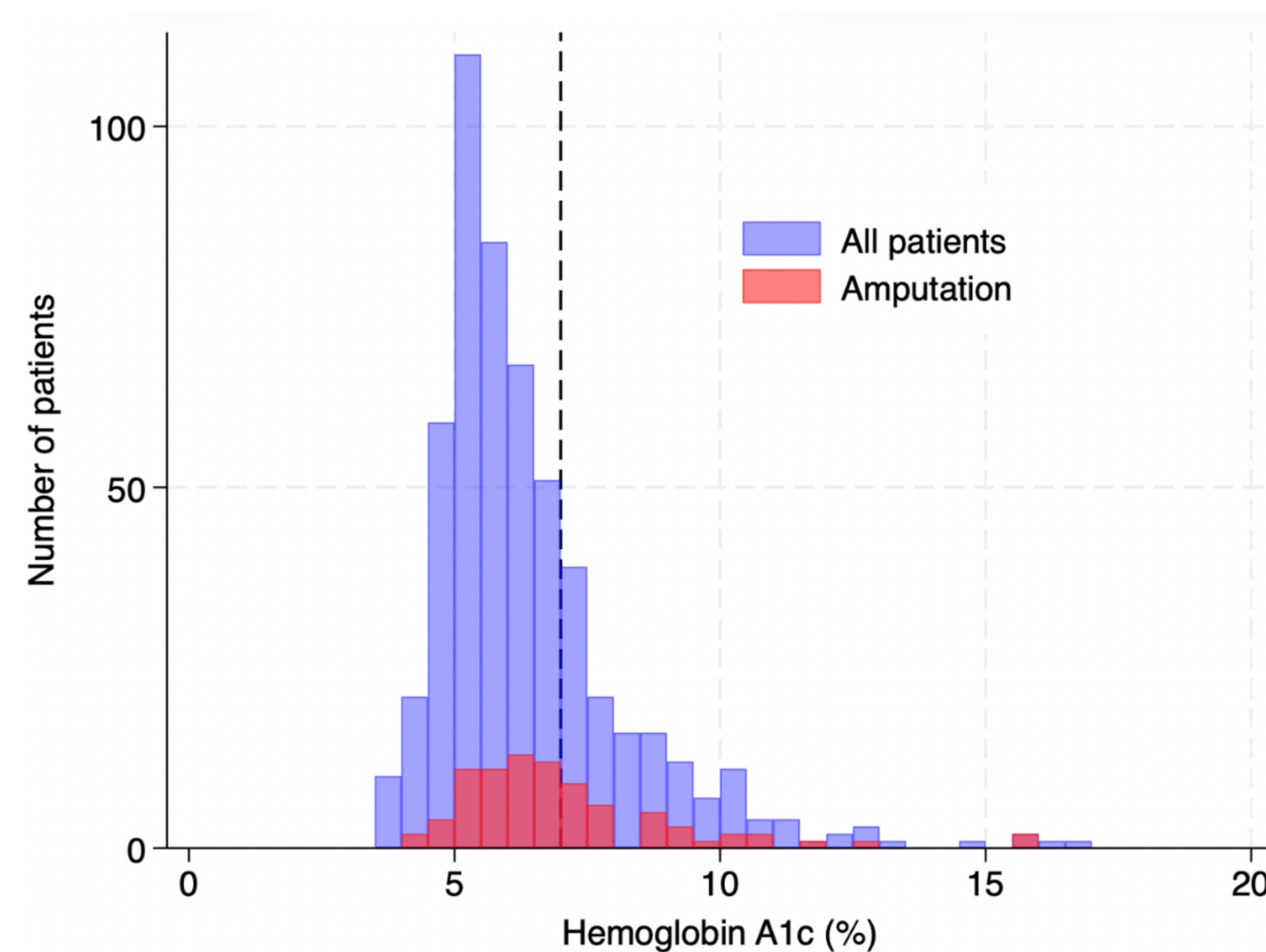
Methods

We tested HbA1c in multiple ways:

- continuous variable
- categorical variable
- 7% threshold

Compared vs. Diabetes diagnosis

- Logistic regression
- Predicted probabilities
- ROC curve analysis



Call to Action

⚠ Do NOT let a "normal" HbA1c delay limb-saving interventions in patients with ESRD-HD

Conclusions

We are using the wrong biomarker in the highest-risk population

- HbA1c does NOT predict LEA
- DM diagnosis >>> HbA1c
- 7% threshold is misleading