Background

• Lower urinary tract symptoms (LUTS) in men and urinary incontinence (UI) in women are dynamic conditions with numerous factors contributing to risk and progression.

• Diabetes is known to cause urinary symptoms
  • Natural history of diabetes leading to LUTS and UI is not well characterized.

Objectives

• Categorize trajectories of urinary symptoms (LUTS in men, UI in women) into clusters based on severity of symptoms
• Evaluate how well these trajectories can be predicted among persons with type 1 diabetes (T1DM)
• Describe factors influencing the long-term trajectory of LUTS in men and UI in women with T1DM

Setting

• Longitudinal data from 565 men and 523 women in the UroEDIC ancillary study of urological complications of the Epidemiology of Diabetes Interventions and Complications (EDIC) were used to define LUTS/UI annually over 5 years.
Results

- Identified 4 subphenotypes for LUTS in men and 3 subphenotypes for UI in women.
- The random forest model achieved a multiclass area-under-the-curve (AUC) of 0.65 for AUASI and 0.61 for Sandvik using 10-fold cross-validation.
- Statistically significant predictors
  - age ($p = 0.002$) and autonomic dysfunction ($p < 0.001$) for LUTS in men
  - BMI ($p = 0.02$) for UI in women

Conclusions

- Model may help identify candidates for interventions targeting metabolic factors contributing to variation in symptoms.