New-Onset ESRD in Adults Secondary to Reflux Nephropathy Has Decreased in Incidence Since 1995

Laura B Cornwell¹, Jonathan Riddell², Matthew Mason²

¹ Rady Children’s Hospital, UC San Diego
² SUNY Upstate Medical University, Syracuse, NY
Background

- **Reflux nephropathy (RN):** renal deterioration related to focal or diffuse renal scarring

- Children with **vesicoureteral reflux (VUR)** are known to have 2.6x risk of having renal scarring
  - ~1% prevalence of VUR in childhood
  - grades 3 and higher having 2.1x more scarring than grades 1-2.

- Management of VUR has evolved over the past decades
  - No specific management has been proven to reduce renal scarring in children

- The risk of ESRD secondary to RN is not well described in children or adults
Objective

• We sought to evaluate whether the RN ESRD incidence has shown changing trends over recent decades.

Hypothesis

• We hypothesized that the incidence of RN ESRD would decrease over recent decades and that age of diagnosis would increase
Materials, Methods

• **United States Renal Data System (USRDS):**
  • National data system that collects information about chronic kidney disease and ESRD
  • Since 1995, the USRDS has mandated that all dialysis centers enroll and submit data on new-onset ESRD patients
  • *Over 2.5 million patients enrolled since 1995*

• Reflux Nephropathy diagnosis codes filtered
  • 1995-2015
Results

- 7,505 patients with ESRD attributed to Reflux Nephropathy

- The incidence has decreased
  - 1996: 1.9 per 1,000,000
  - 2014: 0.6 per 1,000,000
ESRD attributed to Reflux Nephropathy

- Mean age at diagnosis was 47 years (IQR 30-65)
  - Mean age did not change over time
- 58.8% female, 87.2% white
- 66.8% with hypertension
- 73.4% did not need dialysis at ESRD dx
- 44.5% received transplant
- Mean mortality at age 62 (IQR 50-76)
ESRD attributed to Reflux Nephropathy

- Has pediatric incidence changed?:
  - The change in incidence in children is not as prominent
  - Difference approaches significance (p=0.053)
Conclusions

• ESRD attributed to reflux nephropathy is a rare entity, and has gradually decreased in incidence from 1995 to 2015

• The mean age at reflux nephropathy ESRD diagnosis has not changed

Thank you