

Importance of changes to treatment plans based on paediatric renal transplant biopsy findings in Ireland: a 10-year review

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INTRODUCTION

- The therapeutic value of protocol biopsies in paediatric renal transplantation is debated.
- The use of biopsies post-transplant has shown to lead to better graft function 3.5 years after transplantation¹.
- The purpose of this study is to describe the impact of targeted biopsies on altering pharmacological management in our paediatric patient group.

AIMS & OBJECTIVES

- Identify demographics of paediatric renal transplant patients across Ireland from 2007-2017.
- Identify treatment changes based on biopsy findings.

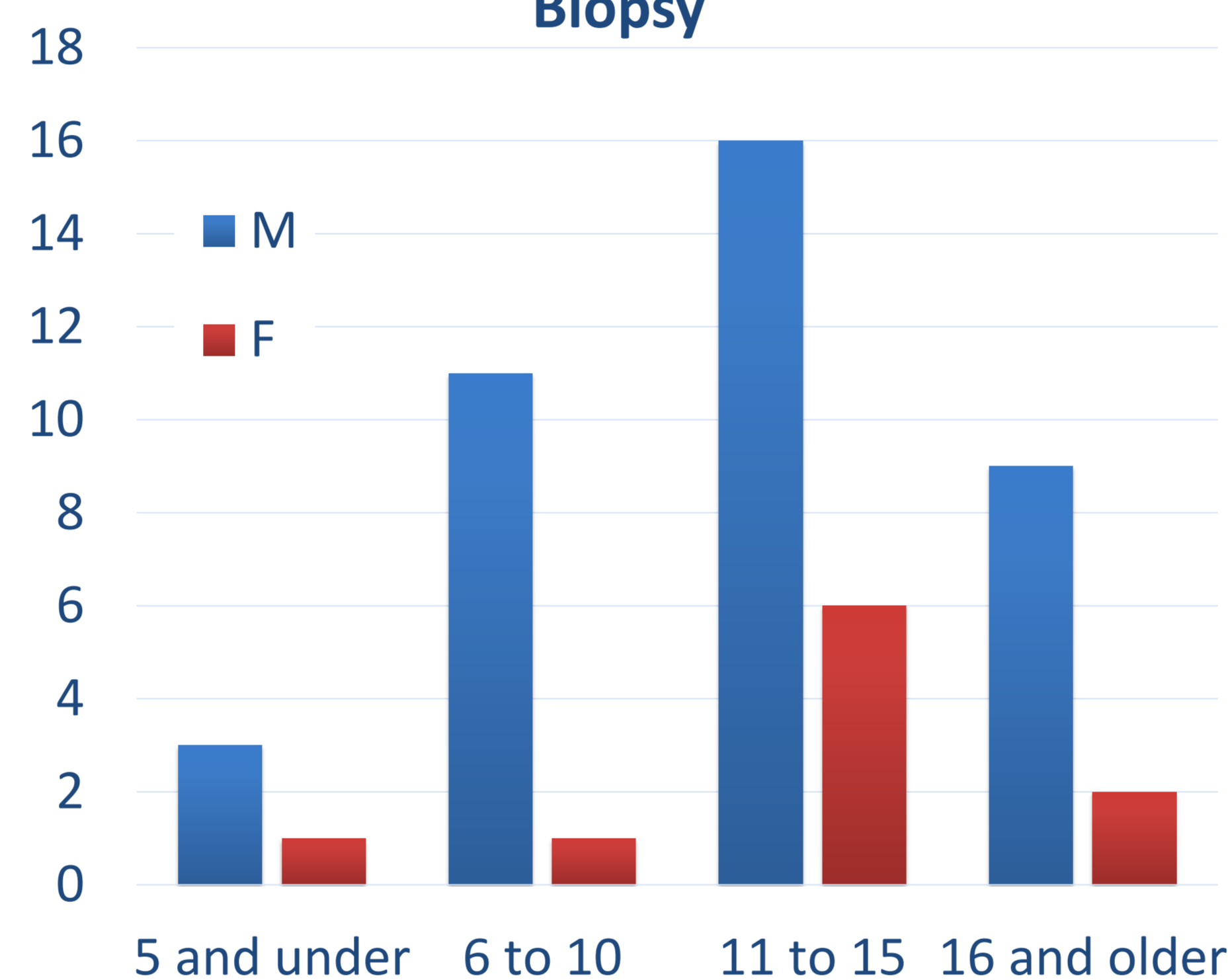
METHODS

- Ethical approval was sought by Children's Health Ireland.
- A retrospective review of 103 patients who received a renal transplant from 2007-2017 was analyzed.
- Patients who underwent at least one renal biopsy at Temple Street Children's University Hospital were included.
- Data collected:
 - Demographic data
 - Clinical Indications
 - Biopsy Findings
 - Histological Findings
- Data analyzed via Microsoft Excel 2016.

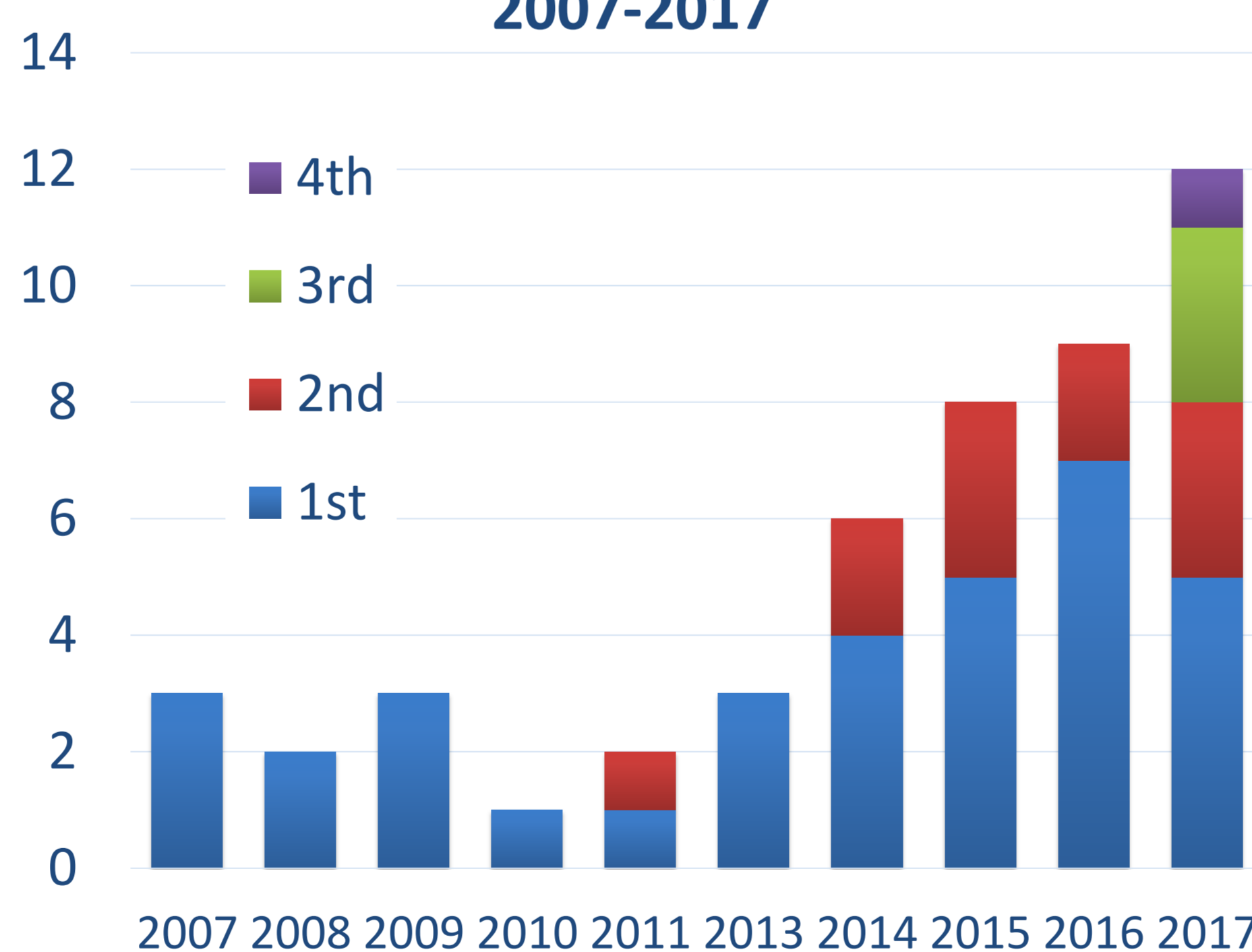
RESULTS

- 26/103 patients (24%) with a renal transplant had one or more biopsies (49 total). A significant raise in creatinine (+/- proteinuria) was the main indication for biopsy.
- Mean age is 9.64 years \pm 4.26 years.
- Time between transplant and biopsy:
 - \leq 1 year = 21/49
 - 2-5 years = 17/49
 - > 5 years = 11/49

No. of Transplant Patients by Age at Biopsy



Biopsy Number from 34 patients 2007-2017



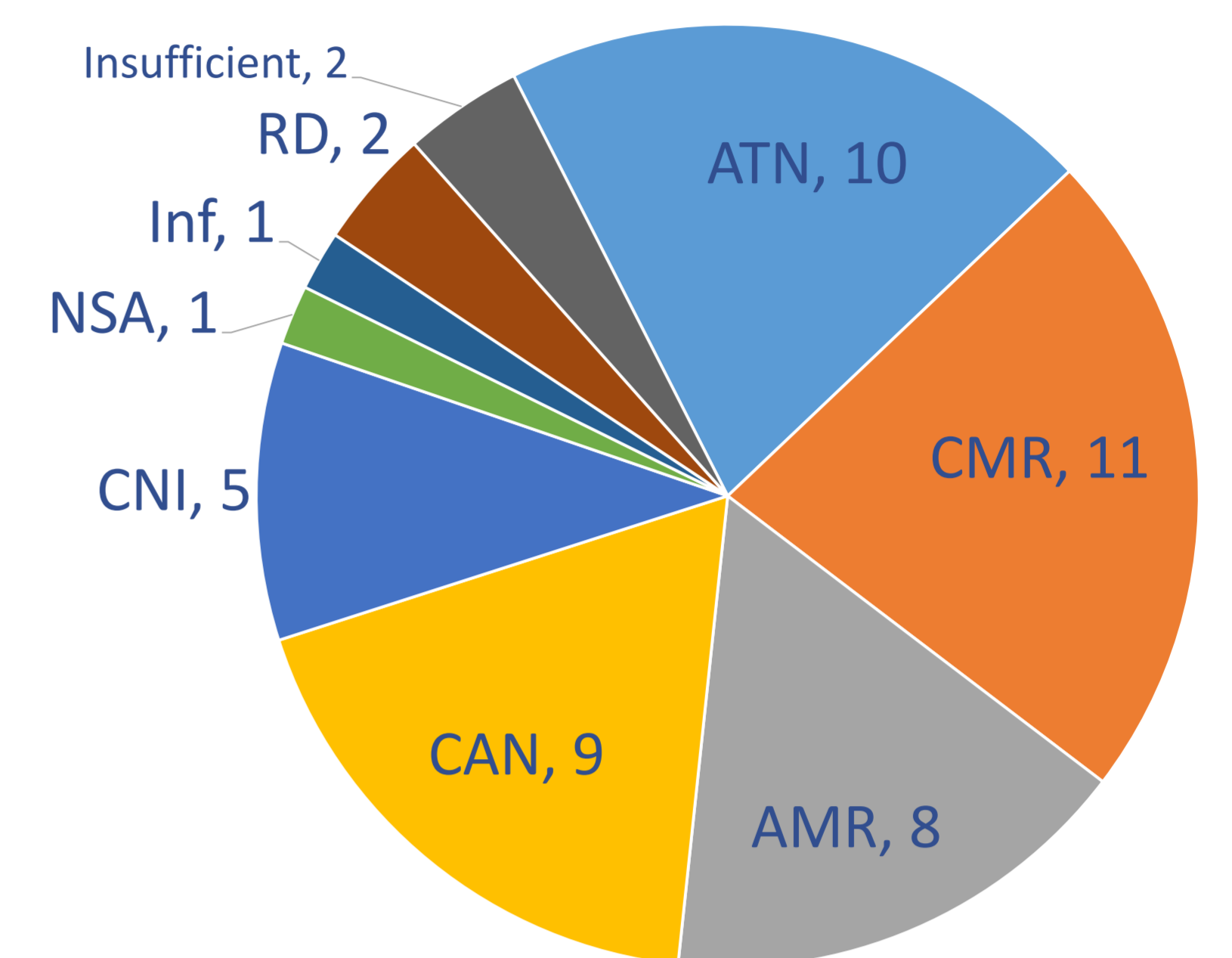
- No major complications were seen during biopsy.

Changes to Treatment post-biopsy

- Approximately 50% of biopsy findings required change in treatment.
 - 19/49 resulted in increased immunosuppression.
 - 5/49 resulted in reduced CNI dose
 - 1/49 resulted in antibiotics for pyelonephritis.

EVALUATION

Diagnoses from Biopsy Findings



Cell mediated rejection (CMR), Antibody mediated rejection (AMR), Drug nephrotoxicity (CNI), Chronic allograft nephropathy (CAN), Acute tubular necrosis (ATN), Other infection (Inf), Recurrent disease (RD), Non-specific nephropathy (NSA).

DISCUSSION

- Using a significant raise in creatinine as an indication for biopsy resulted in increased IS in 19 patients.
- The evidence does not suggest protocol biopsies would be advantageous - particularly as complications may occur.
- No change in therapy occurred in approx. 50% of cases post biopsy.

NEXT STEPS

- A long-term follow up study of outcomes comparing centers that use targeted versus protocol biopsies is recommended.

REFERENCES

- Kanzelmeyer NK, Ahlenstiel T, Drube J, et al. Protocol biopsy-driven interventions after pediatric renal transplantation. *Pediatric Transplantation* 2010; 14: 1012-1018.
- Acknowledgements:** Dr. Elaine Kohler Summer Academy of Global Health Research and the Medical College of Wisconsin Office of Global Health