



# PROSPECTIVE INDIAN CHILDHOOD LUPUS NEPHRITIS REGISTRY: ANALYSIS OF ONE YEAR DATA

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## BACKGROUND

- Lupus nephritis (LN) affects 50-82% of children with SLE and is an important determinant of long-term morbidity and mortality
- There is scarcity of prospective data from large cohorts in developing countries about the treatment outcomes

## OBJECTIVES

In children < 18 years with cSLE nephritis to :

- Record the clinical features, laboratory findings, histopathological patterns and treatment prescription patterns
- Assess the kidney response to various treatment modalities
- Evaluate the factors determining kidney response
- Assess the treatment toxicities

## METHODOLOGY

- Study design:** Multicentre Prospective Registry
- Study site:** Multicentre (9 centres; ICH Kolkata – Nodal Centre)
- Study Duration:** Initially a recruitment period of 2 years with 2 years follow up period was decided upon but later extended
- Sample size:** All consecutive children satisfying recruitment criteria during the study period are being recruited
- Inclusion criteria:**

Children ≤ 18 years, diagnosed with cSLE (**SLICC 2012**) with evidence of nephritis diagnosed within last 6-8 weeks based on **a)** 24 hour urine protein>500 mg/d or UPCR≥0.5 &/or **b)** Active cellular sediments (≥5RBC/hpf, ≥5WBC/hpf in absence of infection or cellular/granular cast & **c)** Renal biopsy showing immune complex glomerulonephritis consistent with LN [**ACR 2012**]

### Exclusion criteria:

- ✓ Drug induced Lupus
- ✓ Mixed connective tissue disease
- ✓ Parents not willing for consent

**Recruitment:** Relevant history, examination findings, relevant lab investigation parameters, immunological parameters were noted at baseline and at every visit. Treatment details were noted. Treatment given was as per treating physicians discretion in line with standard treatment guidelines. Medication adverse effects were noted during subsequent visits. Renal response was defined as complete, partial or no response, based on the urine routine findings, the urinary protein excretion rate and eGFR as per the **EULAR 2012** guideline initially and later modified to incorporate the **KDIGO 2021** guideline

## RESULTS

- 158 children recruited; 68 children complete 1 year data**
- Age** – Median: 12.8 (IQR: 11-14) years (Range: 6 years - 18 years)
- Male : Female** – 17:52
- Interval between SLE interval and LN onset:** 38 (56%) at onset; another 22 (32%) within 2 years; 67 children within 5 years
- Most common extrarenal manifestations:** : Mucocutaneous (n=43, 63%) followed by musculoskeletal and hematological in 31 children (46%) each

ANA	66 (97%)
Anti-dsDNA	59 (87%)
Low complement	66 (97%)
DCT	34 (50%)
APLA	13 (19%)

### Renal Manifestations

Edema	52 (76%)
Oliguria	28 (41%)
Gross Hematuria	13 (19%)
Hypertension	46 (68%)

**Proteinuria:** 68 (100%); Nephrotic – 50 (73%)

Median 24 hour PER (39 children) – 1537 (IQR: 1010 – 2731) mg/m<sup>2</sup>/day

Median UPCR (29 children) – 2.8 (IQR: 1.8-4) mg/mg

**Median eGFR** – 90.4 (IQR: 61.2-118.7) ml/min/1.73m<sup>2</sup>

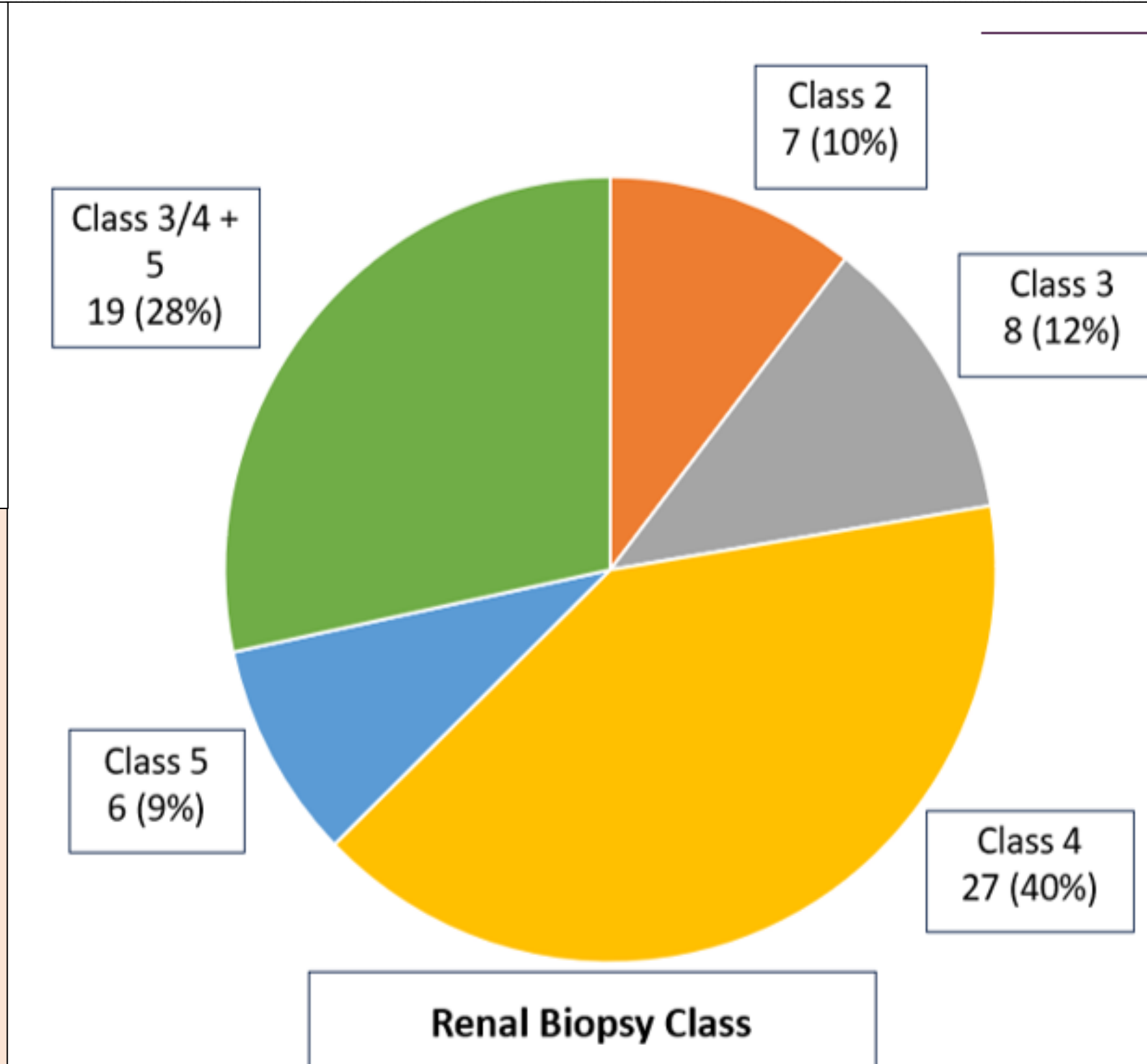
**AKI** – 31 children (46%)

Stage 1 – 18 (26%)

Stage 2 – 6 (9%)

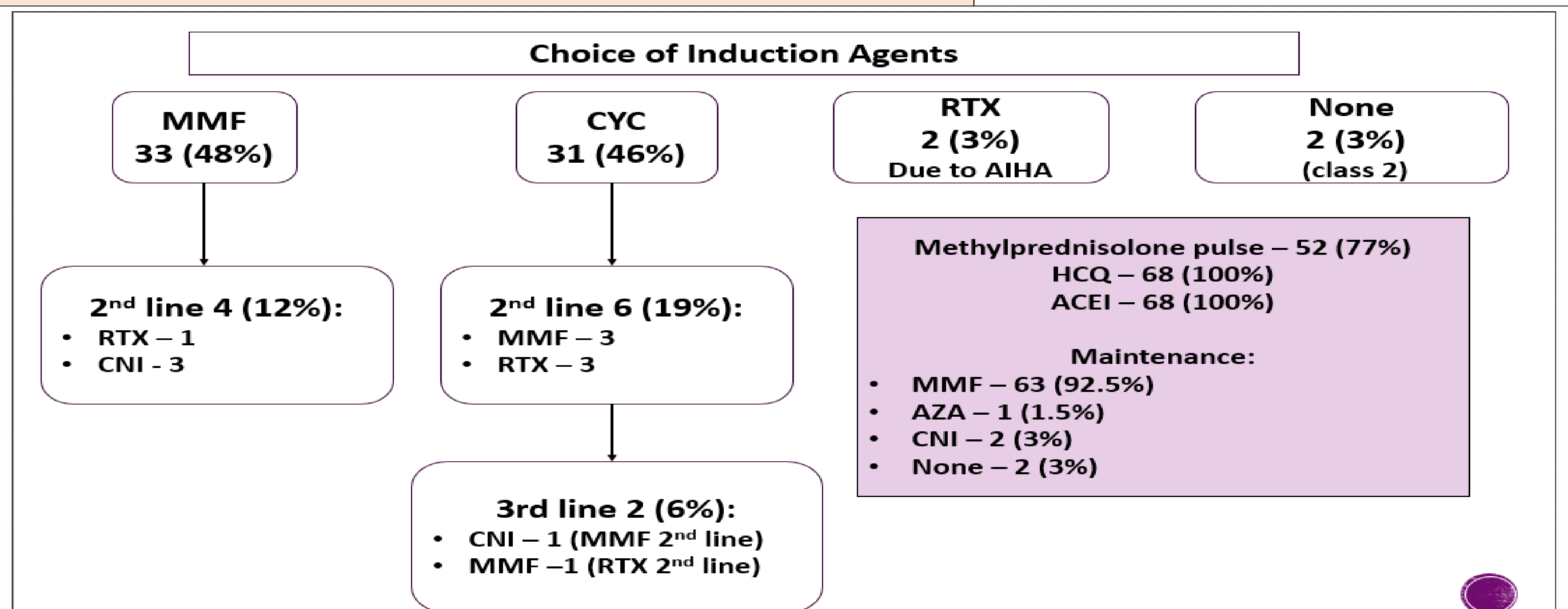
Stage 3 – 7 (10%); 4 required KRT (6%)

**Active Urine Sediments** - 56 (82%)



NIH Activity Index: median 6 (IQR:2-10)

NIH Chronicity Index: 0 in 36, rest 32 had median 2 (IQR:1-3)



### Renal response at 1 year (n=68)

CR	42 (60%)
PR	13 (19%)
NR	7 (10%)
Renal Flare	6 (9%)

### Renal response at 1 year in proliferative LN (n=54)

CR	36 (65%)
PR	7 (13%)
NR	7 (13%)
Renal Flare	5 (9%)

- Time to CR: Median 4 (IQR:3-6.25) mnths; (Range:0.75-12 mnths)
- Renal Flares: 18 children (26%) (1 in 13 children, 2 in 5 children)
- Deaths within 1 year: 6 (4 – severe infections, 1 – DAH, 1 – myocarditis)
- Lost to follow ups: 9
- Advanced CKD: 4 (6%) (stage 3: 3, Stage 4: 1)
- Serious infections requiring hospitalisation: 7 children (10%) (Total 11 events)
- Cushingoid – 16 (Bilateral PSC – 4) [24%]; Neutropenia – 3 [4%]; DM – 1 [1%]

Logistic regression analysis showed no significant association between factors like eGFR at onset, presence of nephrotic range proteinuria at onset, Class III or IV LN, presence of associated class V LN, induction agent used with renal response at 1 year in proliferative LN

## CONCLUSION

- One of the first prospective childhood LN registries from India
- Comparable renal response rates reported across cohorts from HICs and MICs [1,2,3]
- Data from larger cohort will help shed better light on renal outcomes, its predictors, & treatment toxicities

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