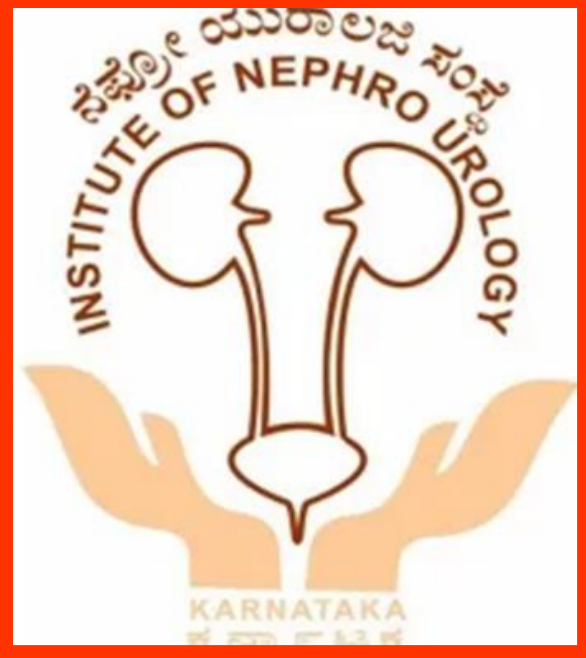


# A SHORT TERM OBSERVATIONAL STUDY ON THE PATTERN OF RENAL INJURY AMONG CENTRAL JAIL INMATES OF BANGALORE



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## Introduction

- Infection related glomerulonephritis (IRGN) is an immunologically mediated glomerular injury
- In the past, the majority of IRGN cases were related to infection with nephritogenic streptococcal strains.
- As the prevalence of Streptococcus pyogenes disease in developed countries has declined, other causative pathogens are recognized more frequently<sup>1</sup>.
- Most of the times, it is not possible to isolate the organisms among patients with IRGN.
- There are various medical problems faced by jail inmates, as seen in one of study<sup>2</sup>, where 42% of inmates had health issues.
- Nearly two-thirds of jail inmates said they had been tested for tuberculosis since admission; over a fifth reported being tested for HIV.
- Hence in our study we aimed to see for the various patterns of renal injury among central jail inmates of Bangalore.

## Methodology

- It was an observational clinical study conducted at INU, Bangalore between 1st April 2020 to 31st July 2021
- Inclusion criteria : All central jail inmates from Bangalore admitted to nephrology department who underwent renal biopsy between 1st April 2020 to 31st July 2021.
- Exclusion criteria : Among immune complex glomerulonephritis favouring infection related glomerulonephritis (IRGN) having persistent low C3 beyond 8 weeks
- Nephrological syndrome of the patient at presentation, requirement of renal replacement therapy, relevant hematological, biochemical and radiological investigations were done and documented in a well structured proforma

## Results

- 14 patients who fulfilled the inclusion criteria were included of which all were males
- The mean age was 36 years.
- All underwent ultrasound guided left renal biopsy

- Immune complex glomerulonephritis favouring infection related glomerulonephritis (IRGN)- 6 (42.8%), Pigment nephropathy – 2 (14.2%), IgA Nephropathy with more than 50 % IFTA – 2 (14.2%), Pauci immune crescentic glomerulonephritis – 1 (7.14%), Chronic interstitial nephritis with more than 50 % IFTA – 1 (7.14%), Hypertensive glomerulosclerosis with more than 50 % IFTA- 1 (7.14%), Chronic glomerulosclerosis with more than 50 % IFTA – 1 (7.14 %) (FIG 1)
- 12 patients were followed up for a period of 3 months. One patient with pigment nephropathy and other one with pauci immune crescentic glomerulonephritis lost to follow up after discharge from the hospital.
- Majority of the inmates had immune complex glomerulonephritis favouring IRGN, 6(42.8%). All of them were males with mean age of 33.6 years. Acute nephritic syndrome in 3(50%), rapidly progressive renal failure (RPRF) in 2(33.3%), followed by nephrotic syndrome in 1(16.6%) patient. Among the risk factors for IRGN that were seen among the jail inmates was past history of smoking in 2, followed by alcoholism among 4 subjects. None of them were diabetics. Among the 6 cases of IRGN, 1(16.6%) had severe renal failure requiring hemodialysis at presentation.
- Clinically the focus of infection could be identified in only 2(33.3%) of the 6 cases of biopsy proven IRGN, which included one with pyoderma over the right upper arm and other one with skin lesion over the left leg. These 6 patients were followed up for a period of 3 months and at the end of 3 months, 4(66.6%) had complete recovery, 1(16.6%) was dialysis dependent and 1(16.6%) had persistent renal dysfunction without dialysis requirement.
- Of the 2 cases with pigment nephropathy, both presented with severe renal failure requiring hemodialysis. One had complete renal recovery at the end of 3 weeks and other patient lost to follow up.
- Among the patients with renal biopsy showing IgA nephropathy, chronic interstitial nephritis, chronic glomerulosclerosis and hypertensive nephrosclerosis, all had severe IFTA.
- All required hemodialysis at presentation and were on thrice weekly dialysis at the end of 3 months

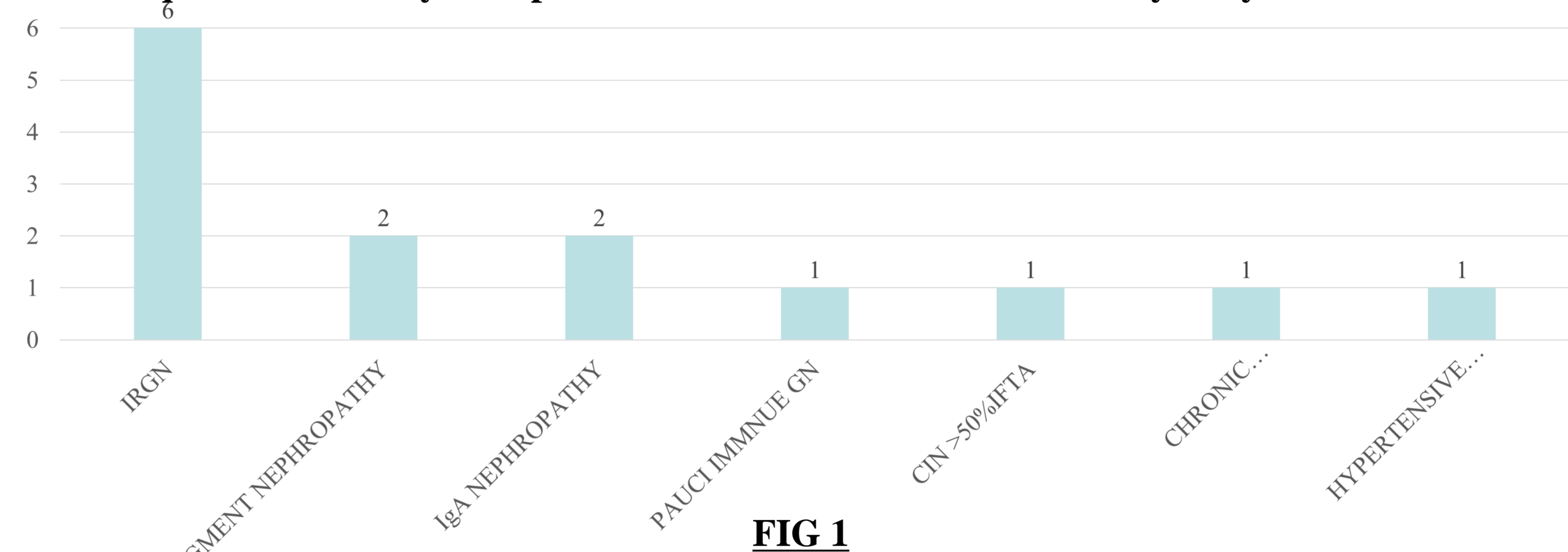


FIG 1

## Discussion

- Among the 14 cases that were admitted to INU Bangalore, majority had 42.8% had immune complex glomerulonephritis favouring IRGN and all were males as noted in other studies as well<sup>2</sup>; clinically focus of infection could be adjudicated in only two of them
- A special consideration on observation of pattern of renal injury among jail inmates is being given, to see for any correctable or preventive factors that would have ignited the renal injury.
- There is well established relationship with infections and renal dysfunction either by direct or indirect mechanism.
- So the probable postulated mechanisms here would be the improper hygiene among the jail inmates due to various reasons, lack of hygienic rooms, or overcrowding in the cells, but all these factors to be thoroughly adjudicated.

## Conclusion

- Our study showed the plausible mechanisms of infection related renal injury among central jail inmates of Bangalore, which if corrected can prevent these kind of kidney injury. Further, our study also leaves a scope for large scale epidemiological survey to find out the most appropriate cause of infections among the jail inmates that would have triggered the renal injury.

## References

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