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## Introduction

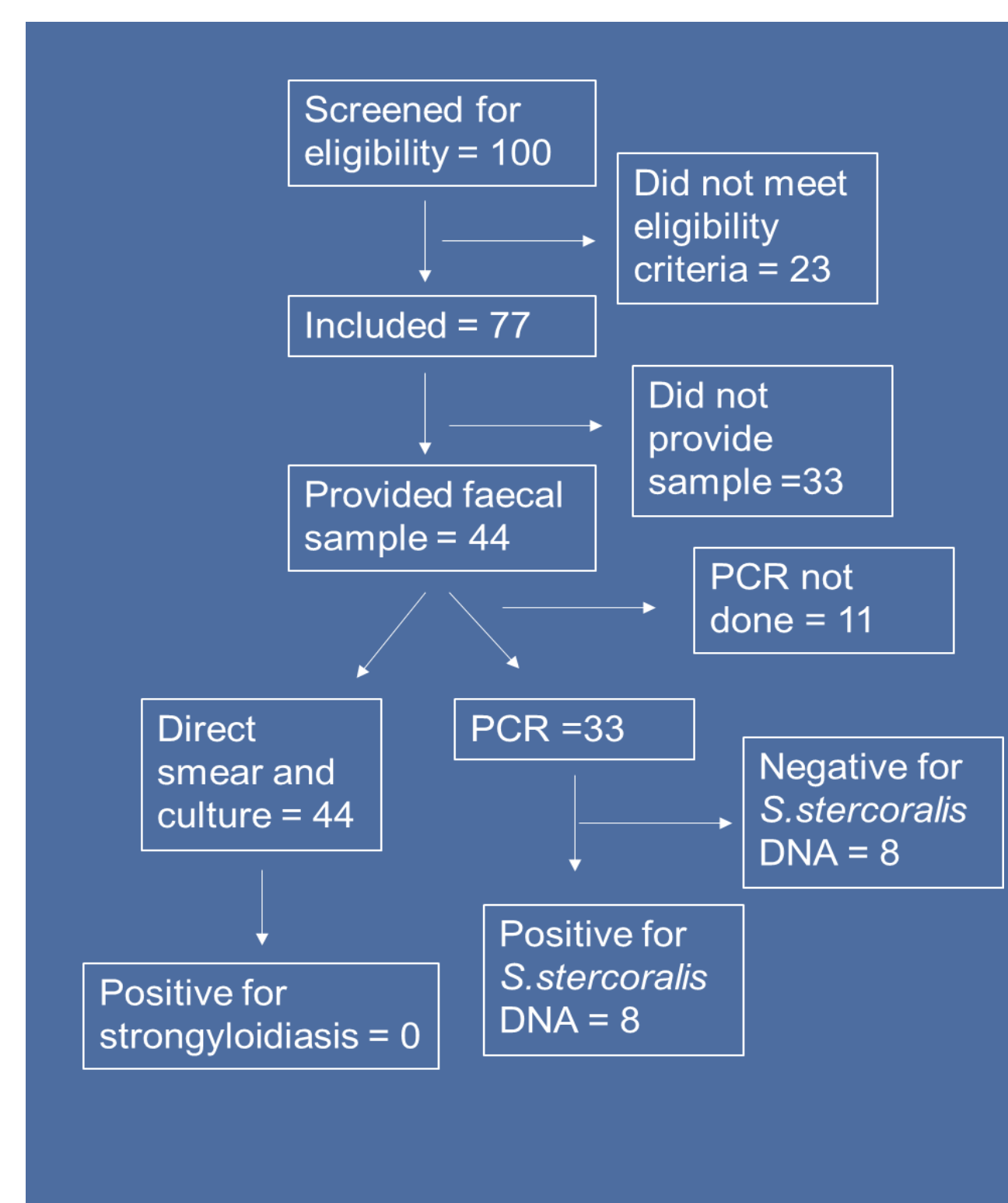
- Strongyloidiasis is a neglected tropical disease caused by the soil transmitted helminth *Strongyloides stercoralis*.
- It is transmitted to humans by the skin penetration of filariform larvae.
- Strongyloidiasis is mostly asymptomatic in the immunocompetent host.
- Hyper infection and disseminated disease can occur in the immunocompromised due to parthenogenesis and autoinfection.
- Thus, patients with renal disease, with considerable weakened immune systems are at high risk.
- Studies on strongyloidiasis are scarce in Sri Lanka.
- This is part of a larger study that aimed to identify the presence and associated factors of strongyloidiasis among patients at risk of immunosuppression.

This brief study aimed to identify the presence of strongyloidiasis among patients with renal disease.

## Methods

- Study type** - Descriptive cross sectional study
- Duration** - From February 2022 to October 2022
- Samples collected at** - the University Medical Unit of Colombo South Teaching Hospital (CSTH) and The Nephrology Unit of the Sri Jayewardenepura General Hospital (SJGH), Sri Lanka
- Samples processed at** – Departments of Parasitology – University of Sri Jayewardenepura (USJ) and University of Kelaniya
- Included**- Adults patients with end stage renal disease (ESRD), patients on immunosuppressive medication following post-renal transplantation or tubulo-interstitial nephritis (TIN).
- Excluded** – critically ill patients, patients with gastrointestinal bleeding, patients who have taken anthelmintics within the past month.
- Sampling method** - convenience sampling
- Sample** – Faecal sample
- Tests** – Direct smear examination, agar plate, charcoal and Harada-Mori cultures, conventional PCR using species specific primers.
- Ethical approval**- from ERC of USJ,CSTH and SJGH.

## Results

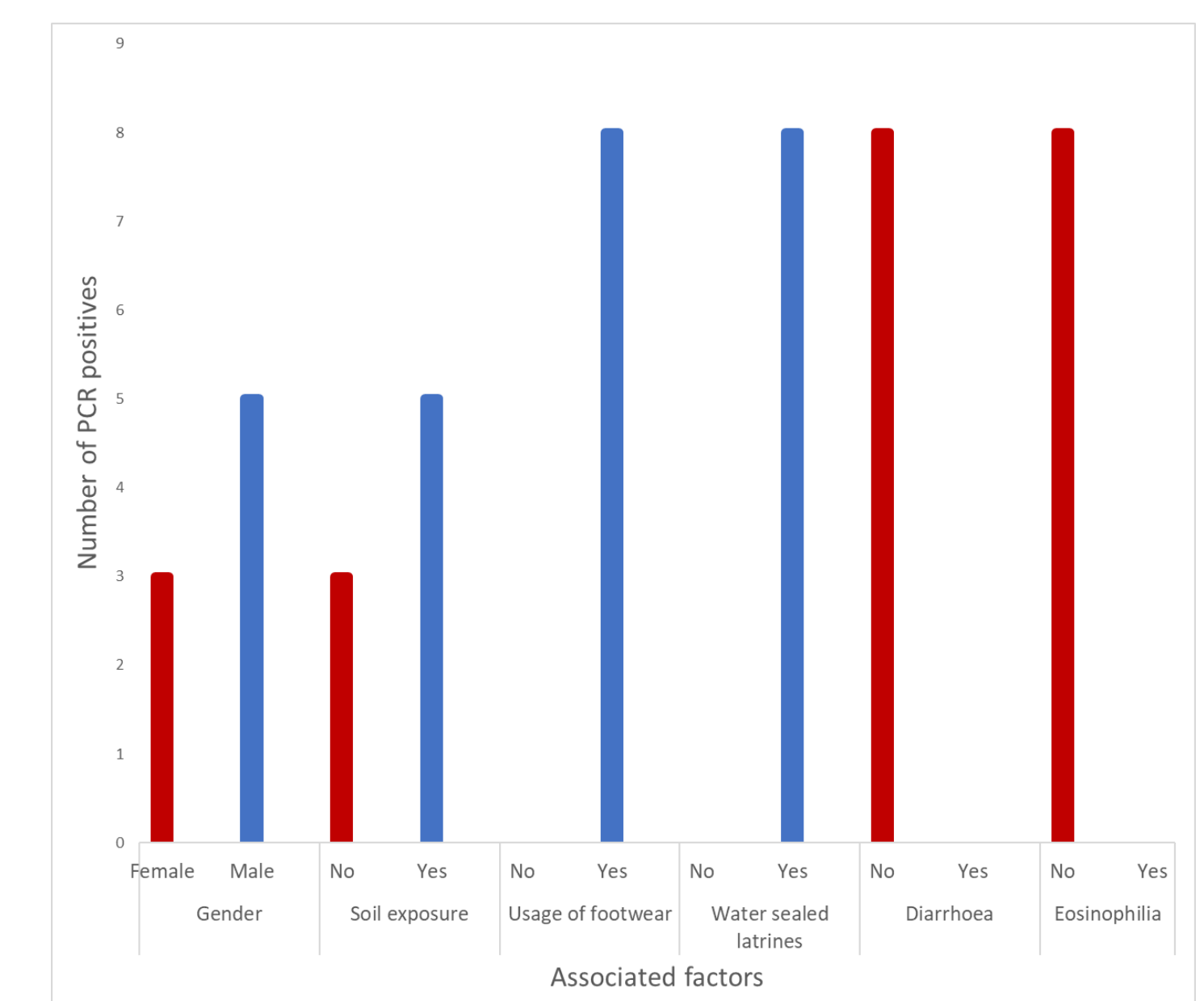


Flow chart depicting the number of patients screened, enrolled, provided samples and ultimately the positive results.

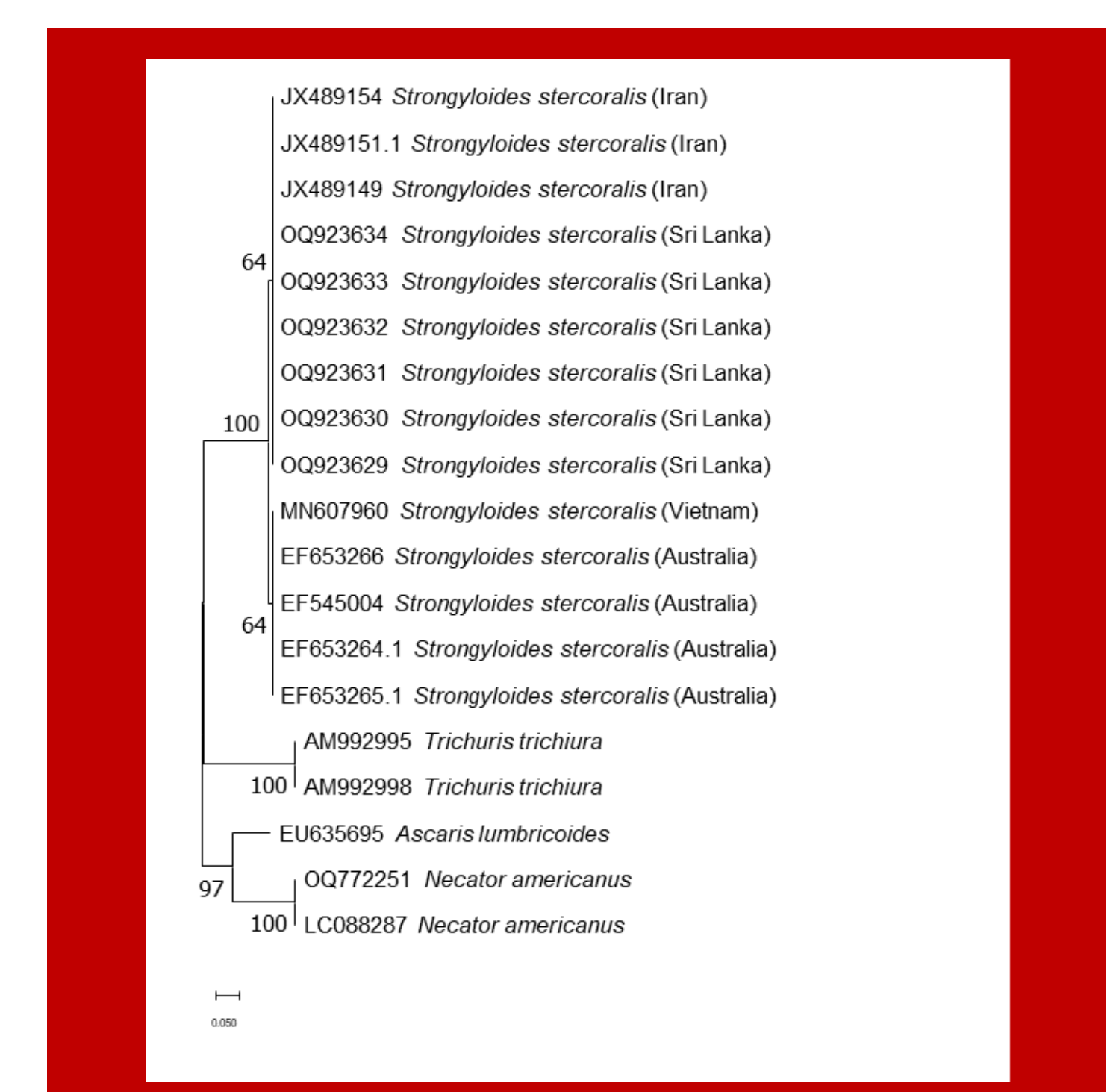
- 44 (57.1%) out of 77 provided a faecal sample.
- None of the direct smears nor the cultures became positive.
- Eight (24.2%) out of 33 patients, on whom PCR was performed, were positive for *Strongyloides* DNA.
- Six PCR products were sent for Sanger Sequencing and was found to be 100% homologous to *Strongyloides stercoralis*.
- Statistical analysis was not performed against the associated factors as the sample size was small.**

Disease condition	Provided sample	PCR performed	PCR positive
End stage renal disease	26	20	5
Post renal transplantation	13	8	1
TIN	4	4	2
Nephrotic syndrome	1	1	0
Total	44	33	8

Table depicting the number of PCR positives by disease condition



Bar chart describing the characteristics of the PCR positive patients



Phylogenetic relationships of the sequences isolated from the study.

## Discussion

- This is the first study in Sri Lanka that used molecular methods to diagnose strongyloidiasis among immunosuppressed patients.
- Approximately 24% of patients with renal disease were found to be positive for *S.stercoralis* DNA.
- Interestingly, none of these patients exhibited symptoms, eosinophilia or nor were they positive via parasitological methods, suggesting probable chronic infection.
- Chronic kidney disease is a burden in Sri Lanka and infections are a common cause of death in end stage renal disease.
- Several limitations exist in this study – small sample size, low response rate by the patients, and the limited number of PCR performed due to resource constraints.
- A larger descriptive study, comprising the whole island would be needed to establish associations with the risk factors.

## Conclusion

- Chronic infection due to strongyloidiasis is present among this limited study population, who may have been infected at some point of their lives.
- Renal disease is a huge burden in Sri Lanka; complications due to strongyloidiasis would mean 'double trouble'.
- Early diagnosis in patients with renal disease by molecular methods, along with a larger study to assess the true prevalence is suggested.

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