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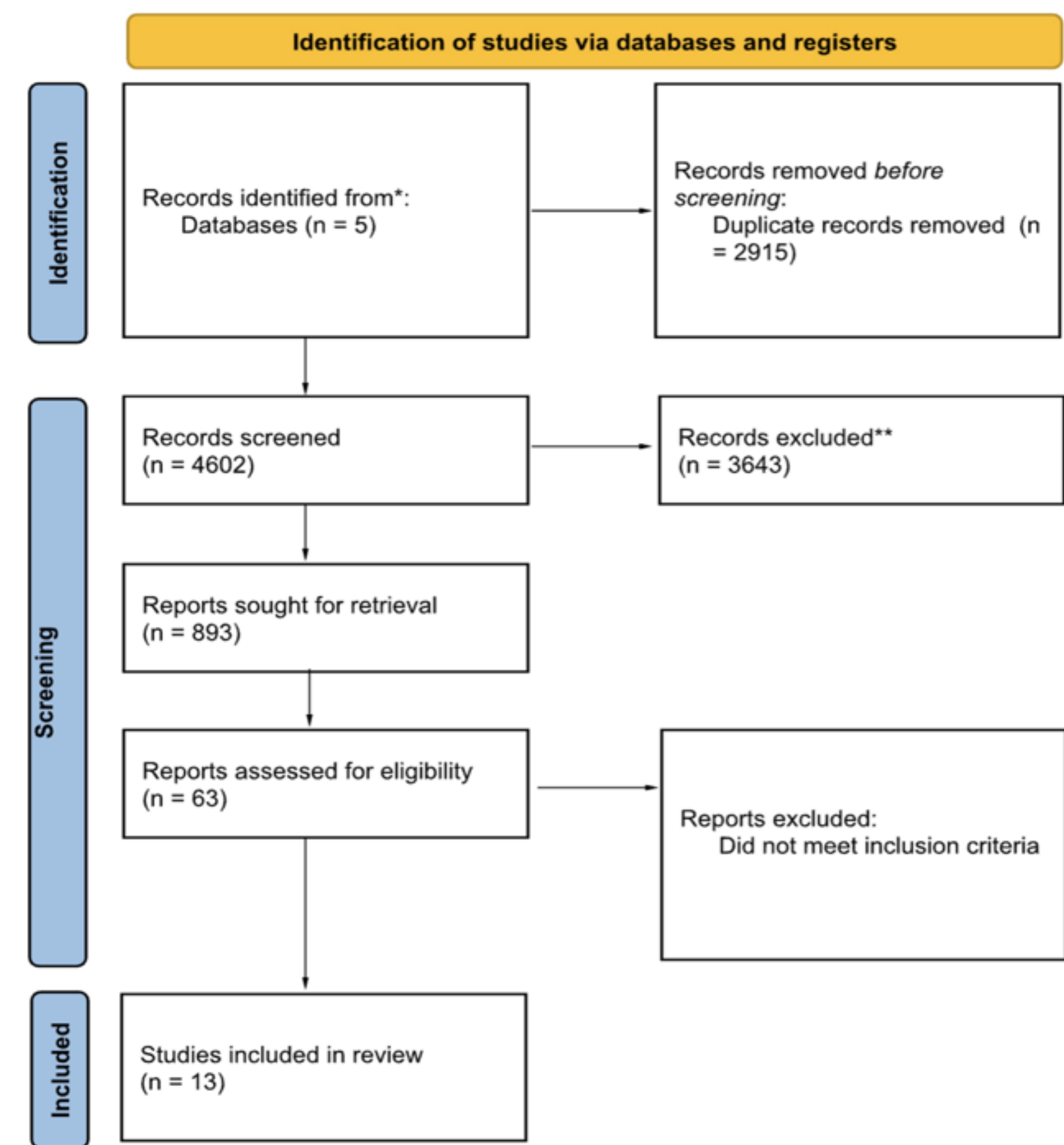
Introduction

- Fulminant life-threatening presentations of acute tropical infectious diseases may occur, and the degree of end-organ impairment may qualify patients for emergency kidney solid-organ transplantation (SOT).
- However, kidney SOT may not be beneficial in all cases as failure of the transplanted organ is only one possible cause of death¹. The outcomes from such an intervention are largely unknown for many acute tropical infectious diseases.
- Due to a paucity of synthesized data, there is a knowledge gap around indications for and outcomes in kidney SOT for severe acute tropical infectious diseases.
- We aim to understand the frequency, indications for, and outcome of SOT in the kidney for treatment of acute tropical infectious diseases (such as malaria) presenting with fulminant organ failure.

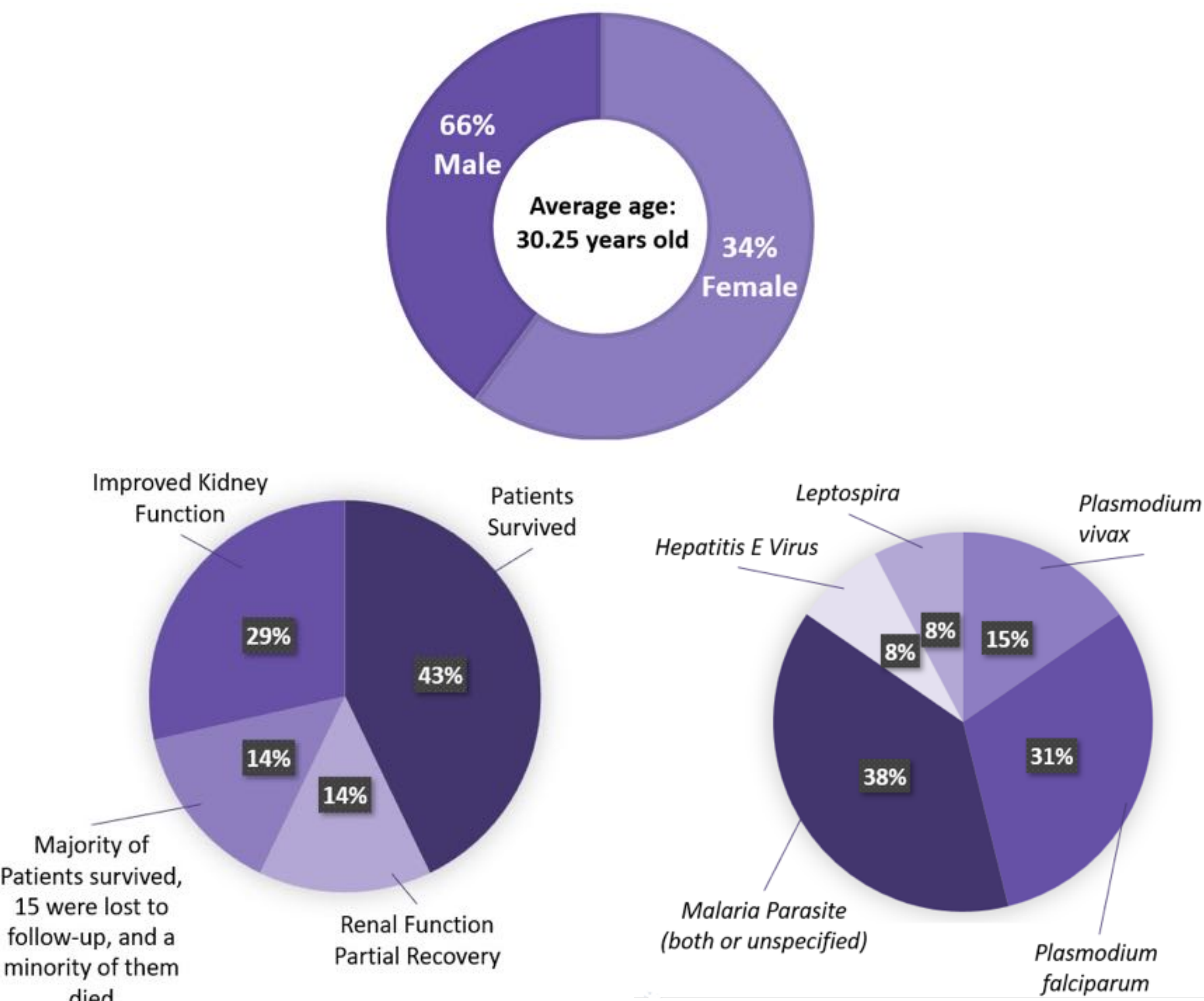
Methods

- We will be conducting a systematic review and meta-analysis.
- PubMed, Embase, Scopus, Cochrane, and LILACS were searched using combinations of search terms such as the following: "kidney" and "transplant", and "malaria", "*Plasmodium spp.*", and "Lepto*" from database inception to January 2023.

Table 1. PRISMA Flow Diagram for Kidney SOT Systematic Review Updated Literature Review January 2023



Results



Figures 1, 2, 3. Summary of patient age demographics, outcomes post SOT, and type of pathogen in patient cases.

Discussion & Conclusion

1. Due to a paucity of synthesized data, there is a knowledge gap around indications for and outcomes in kidney SOT for severe acute tropical infectious diseases.
2. Most published literature on kidney SOT in acute tropical infectious diseases is related to kidney transplantation for malaria. One of the common health outcomes is survival.

First Author (Last and First Name)	Article Title	Year of Publication	Journal	Vol, Issue, Page #s)	Population (N)	Age	Sex	Organ	Tropical Disease(s)	Pathogen (Full name)	Method of Diagnosis	Outcome (ex. Mortality/Survival; Temperature; Biochemical Parameter, etc.)	DOI	URL	Article Type	Other Comments
Sheerin, Neil	From malaria to transplantation: the evolution of treatment for the nephrotic syndrome in a single patient (Y)	1999	Nephrol Dial Transplant	Vol. 14, Pages 800-801	1	19	Female	Kidney	Malaria	<i>Plasmodium falciparum</i>	Microscopy	Patient survived	10.1093/ndt/14.3.800	https://academic.oup.com/ndt/article/14/3/800/1850154	Letter	N/A
Rajapurkar, MM	Renal involvement in malaria (Y)	1994	Journal of Postgraduate Medicine	1994;40:1324	14006	N/A	N/A	Kidney	Malaria	<i>Plasmodium falciparum</i>	Microscopy	N/A: review of how malaria presents in the kidney	N/A	http://www.jgmonline.com/article.asp?issn=0974-3859;year=1994;volume=40;issue=3;pages=132-134;page=134;urlas=134;Rajapurkar	Review	N/A
Lombardi, Raul	Acute kidney injury in Latin America: a view on renal replacement therapy resources (Y - PubMed)	2014	Nephrology Dialysis Transplantation	Vol. 29, Issue 7, Pages 1369-1376	N/A	N/A	N/A	Kidney	Leptospirosis	Leptospira	Microscopy	AKI mortality rate: 20-60%	10.1093/ndt/gfu078	https://academic.oup.com/ndt/article/29/7/1369/1944858	Research Article	Article mainly focuses on Acute Kidney Injury (AKI), and addresses many causes including leptospirosis, dengue, malaria and Hantavirus.
Rajesh, Jhorawat	<i>Plasmodium vivax</i> induced hemolytic uremic syndrome: An uncommon manifestation that leads to a grave complication and treated successfully with renal transplantation. (Y)	2015	Tropical Parasitology	Vol. 5(2): Pages 127-129.	1	28 years old	Male	Kidney	Malaria	<i>Plasmodium Vivax</i>	Microscopy	Patient was dialysis dependent and later underwent renal transplantation successfully.	10.4103/2229-5070.162528	https://www.ncbi.nlm.nih.gov/pubmed/26629457	Review	N/A
Patel, MP	<i>Plasmodium vivax</i> malaria presenting as hemolytic uremic syndrome. (Y)	2013	Indian Journal of Nephrology	Vol. 23, Issue 1, Pages 74-5	1	20 years old	Female	Kidney	Malaria	<i>Plasmodium Vivax</i>	Microscopy (Peripheral smear)	Although platelet count and LDH were normalized with the therapy renal function recovered partially (serum creatinine 3 mg/dL).	N/A	N/A	Case Report	N/A
Kute, V.B.	Outcome and prognostic factors of malaria-associated acute kidney injury requiring hemodialysis: A single center experience (Y)	2012	Indian Journal of Nephrology	22(1)33-38	59	Mean age of patients was 33.63	44 males, 15 females	Kidney	Malaria	<i>Plasmodium falciparum</i> , <i>Plasmodium vivax</i> and mixed of P/Pv	Microscopy (Thick and thin smear)	Mortality/Survival	10.4103/0971-4065.83737	https://www.ncbi.nlm.nih.gov/pubmed/22279340	Research Article	No transplant done in this study. This article studied biochemical markers and severity of illness (APACHE II, SOFA, MODS, and GCS scores) associated with mortality in Malaria patients.
Kanodia, K.V.	Malaria induced acute renal failure: a single center experience (Y)	2010	Saudi Journal of Kidney Diseases and Transplantation	21(6):1088-1091	100	The mean age was 32 years old	63 males, 37 females	Kidney	Malaria	<i>Plasmodium falciparum</i> , <i>Plasmodium vivax</i> and mixed of P/Pv	Microscopy (Thick and thin smear)	Mortality/Survival	N/A	https://www.ncbi.nlm.nih.gov/pubmed/21069178	Research Article	No transplant done in this study. This article studied biochemical markers associated with mortality in Malaria patients. (Same group and similar study to #26)
Reynaud, F.	Rhabdomyolysis and acute renal failure in <i>Plasmodium falciparum</i> malaria (Y)	2005	Nephrology Dialysis Transplantation	Vol. 20, Issue 4, Page 847	1	20 years	Female	Kidney	Malaria	<i>Plasmodium falciparum</i>	Microscopy	Patient survived but lost her eyesight after complete recovery	10.1093/ndt/gfh886	https://academic.oup.com/ndt/article/20/4/847/1834450	Letter	N/A
N/A	Collapsing glomerulopathy and hemolytic uremic syndrome related to malaria: a case report (Y)	2008	Nephrol Dial Transplant	23:3359-3361	1	37	Female	Kidney	Malaria	<i>Plasmodium falciparum</i>	Microscopy	A protracted course of steroids yielded a complete, unexplained resolution of the nephrotic syndrome and renal function was normal at 18 months	10.1093/ndt/gfn427	https://pubmed.ncbi.nlm.nih.gov/pubmed/18076354	Case Report	No transplantation done
Basal, G	Acute kidney injury in tropical acute febrile illness in a tertiary care centre-RIFLE criteria validation (Y)	2011	Nephrol Dial Transplant	26(2):524-31	367	39.7±16.9	60% males, 40% females	Kidney	Falciparum Malaria (10.4%), Dengue (7.6%), scrub typhus (51.2%), mixed malaria (6.5%), leptospirosis (3.3%), undifferentiated acute febrile illness (0.4%) and others (3.8%)	<i>Plasmodium falciparum</i> , Flavivirus, Orientia tsutsugamushi, <i>Plasmodium vivax</i> , Leptospira,	Microscopy	Mortality/Survival	10.1093/ndt/gfq477	https://pubmed.ncbi.nlm.nih.gov/pubmed/21072532	Research Article	No transplant done - article focuses on AKI
Naqvi, R.	Outcome in severe acute renal failure associated with malaria (Y)	2003	Nephrology Dialysis Transplantation	Vol. 18, Issue 9, Pages	2098	33.5 years old	99 Males, 25 Females	Kidney	Malaria	<i>Plasmodium falciparum</i> , <i>Plasmodium vivax</i>	Microscopy	77 (62%) patients had complete renal recovery, 15 (12%) were lost to follow-up (after discontinuation of dialysis, in a state of partial recovery) and 32 (26%) died. Of the survivors, 77 (62%) had complete recovery of renal function, while 15 (12%) were progressing towards recovery when lost to follow-up.	10.1093/ndt/gfq260	https://academic.oup.com/ndt/article/18/9/1820/1841925?searchresult=1	Research Article	Most of the deaths (78%) occurred within the first 48 h of admission. Among the 92 patients who survived, 56 (61%) were oliguric.
Kamar, N.	Hepatitis E Virus and Kidney in Solid-Organ Transplant Patients (Y)	2012	Transplant Journal	Volume 96, Issue 6, pages 617-623	51	48 years old	42 Males, 9 Females	Kidney	Viral Hepatitis E infection	Hepatitis E Virus (HEV)	Antibody Detection	Improved kidney function, eGFR levels (15/51 or 29% of patients had their eGFR decreased by more than 20% compared with preinfection levels), decreased proteinuria	10.1097/TP.0b013e318245f14c	https://pubmed.ncbi.nlm.nih.gov/2298032/	Case Report	Focus of article is on kidney transplantation, but liver and kidney-pancreas transplants were also considered. Out of 51, 33 were kidney transplant recipients, 15 were liver transplant recipients, and 3 were kidney-pancreas recipients.
Elsahar M.	Malaria Incidence among Kidney-Transplanted Recipients in an Endemic Malaria Area, Sudan	2012	Saudi Journal of Kidney Diseases and Transplantation	Volume 23, Issue 5, pages 1099-1103	110	43.3 years old	71 Males, 39 Females	Kidney	Malaria	Malaria parasite (Does not explicitly say specific type)	Microscopy	N/A	10.4103/1319-2442.100970	https://journals.lww.com/sjkd/Fulltext/2012/23050/Malaria_Incidence_Among_Kidney_Transplanted_35.asp	Research Article	study was focused on incidence

Table 2. Summary of findings table for studies included in this project.

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