

Supplementary Table 4: Published studies of renal involvement in rickettsial infection

Study	Diagnostic test	Sample size (n)	Age (years)	AKI definition	AKI incidence
Yen TH <i>et al.</i> , 2003 ³⁶	IFA IgM	39	-	-	7.7%
Wu KM <i>et al.</i> , 2009 ¹⁸	ELISA	136	>2	Serum creatinine >0.5 mg/dL increase over baseline or 24 hr urine output <400 mL	6.6%
Chrispal A <i>et al.</i> , 2010 ¹⁷	IgM ELISA	189	>16	Serum creatinine > 1.4 mg/dL	19.6%
Basu G <i>et al.</i> , 2011 ¹¹	ELISA	188	>18	RIFLE	42.6% (risk, injury, and failure: 48%, 26% and 26%, respectively)
Kumar M <i>et al.</i> , 2012 ²⁰	Clinical and Weil-Felix	35	<12	AKIN	20% (stage 1, 2, and 3: 29%, 42%, and 29%, respectively)
Attur RP <i>et al.</i> 2013 ¹⁰	Weil-Felix and IgM ELISA	259	Median age 39	RIFLE	23.2% (risk, injury, and failure: 38%, 22%, 40%) respectively
Vikrant <i>et al.</i> , 2013 ⁷	IgM ELISA	515	41.4 ± 15.9	RIFLE	35% (risk, injury, failure: 45%, 34%, 21% respectively)
Kumar V <i>et.</i> , 2014 ²¹	IgM ELISA, DNA in PCR (primarily)	49	11-65, mean age 34.1 ± 14.4	KDIGO	53% (Stage I, II, and III: 19.2%, 15.4%, and 65.4% respectively)
Sun IO <i>et.</i> , 2014 ²²	IgM ELISA	223	18-90	RIFLE	21% (risk, injury, failure: 51%, 45%, 4%, respectively)
Loomba V <i>et.</i> , 2014 ¹²	Rapid diagnostic test- SD Bioline	62	mean age of 39.9	-	25.8%

Sharma N et., 2016 ⁹	IgM ELISA, nested PCR	228	Mean age 35	-	32%
Nair JJ et., 2016 ²³	Weil Felix	5	>18	KDIGO	40% (All had AKI Stage 1)
Sivarajan S et., 2016 ²⁴	Rapid diagnostic test- SD Bioline	90	≥18, mean age 36.3	Rise of serum creatinine 0.3mg/dl or 50% higher in 24-48 hours, reduction in urine output to 0.5 mL/kg per hour for longer than 6 hours	12.2%
Hwang K et., 2017 (25)	Clinical and IFA titer	150	57.94 ± 18.85 years	RIFLE	35.9% (risk, injury, failure: 25.9%, 7.3%, 2.7%, respectively)
Sun IO et., 2017 ²²	IgM ELISA	138	20–86	RIFLE	18% (risk, injury, failure: 64%, 24%, 12%, respectively)
Sedhain A et., 2017 ³	IgM ELISA test	502	1-79, mean age was 30.37 ± 18.81 years	KDIGO	35.8% (Stage I, II, and III: 66%, 33%, and 1%, respectively)
Jayaprakash V et., 2019 ¹⁶	IgM ELISA	272	Paediatrics: ≤18 years. Adult population: mean age was 45.7 ± 15 years	KDIGO	18.7% (Stage I, II, and III: 10.88%, 3.67%, and 4.14%, respectively)
Kim MH et., 2019 ²⁶	Clinical, PHA/IFA	710	>18, median age was 62.5 years	Serum creatinine ≥2 mg/dL or creatinine change of >0.5 mg/dL/day	4.9%
Sharma R et., 2019 ²⁷	IFA test for IgM	92	≥ 18 years	Urine output < 479 mL/24 h or < 159 mL/8 h, serum	8.7%

				BUN > 100 mg/100 dL, serum creatinine > 3.5 mg/100 dL	
Yang HJ et., 2020 ²⁸	IgM ELISA	467	Adults	RIFLE	21.6% (risk, injury, failure: 57.4%, 36.6%, 5.9%, respectively)
Gaba S, et., 2020 ²⁹	IgM ELISA	176	≥ 13 years	KDIGO	27.8% (Stage I, II, and III: 13%, 11.3%, and 3.4%, respectively)
Bal M et., 2021 ³⁰	IgM ELISA	140	Median age 47	RIFLE	Pediatrics: 3.70%. Adults: 32.14% (risk, injury, failure: 11.1%, 13.3%, 60%, respectively)
Grover R et., 2021 ³¹	IgM ELISA	38	Adults	KDIGO	13.16% (All had AKI Stage 3)
Oh JH et., 2021 ³²	IgM ELISA	611	Adults	RIFLE	23.1% (risk, injury, failure: 64.5%, 30.5%, 5%, respectively)
Verma SK et., 2021 ³³	IgM ELISA	52	Mean age was 35.17 ± 16.90 years	AKIN	23.1%
Patel ML et., 2024 ³⁴	-	140	Median age 47	RIFLE	32.14% (risk, injury, failure: 11.1%, 13.3%, 60%, respectively)
Goyal C et., 2024 ³⁵	IgM ELISA	109	mean age was 43.9	-	44.04%

IgM: Immunoglobulin M, PHA: Passive hemagglutination assay, IFA: Indirect immunofluorescent antibody assay, ELISA: Enzyme linked immune sorbent assay, PCR: Polymerase chain reaction, RIFLE: Risk, injury, failure, loss, and end-stage kidney disease, KDIGO: Kidney disease improving global outcomes, AKIN: Acute kidney injury network