Appendix S1 Full Electronic Search Strategies.

PubMed/MEDLINE

Date last searched: 31 October 2025

("Kidney Transplantation"[MeSH] OR kidney transplant*[Title/Abstract] OR renal transplant*[Title/Abstract]) AND (living donor*[Title/Abstract] OR living-donor*[Title/Abstract]) AND (multiple renal arter*[Title/Abstract] OR accessory renal arter*[Title/Abstract] OR double renal arter*[Title/Abstract] OR multiple arter*[Title/Abstract]).

Embase (Elsevier)

Date last searched: 31 October 2025

('kidney transplantation'/exp OR kidney transplant*:ti,ab OR renal transplant*:ti,ab)

AND ('living donor'/exp OR living donor*:ti,ab OR living-donor*:ti,ab) AND ('multiple renal artery'/exp OR multiple renal arter*:ti,ab OR accessory renal arter*:ti,ab OR double renal arter*:ti,ab).

Scopus

Date last searched: 31 October 2025

TITLE-ABS-KEY (("kidney transplant*" OR "renal transplant*") AND ("living donor*" OR "living-donor*") AND ("multiple renal arter*" OR "accessory renal arter*" OR "double renal arter*")).

Web of Science Core Collection

Date last searched: 31 October 2025

TS = (("kidney transplant*" OR "renal transplant*") AND ("living donor*" OR "living-donor*") AND ("multiple renal arter*" OR "accessory renal arter*" OR "double renal arter*")).

Cochrane Central Register of Controlled Trials (CENTRAL)

Date last searched: 31 October 2025

("kidney transplant*" OR "renal transplant*") AND ("living donor*" OR "living-donor*") AND ("multiple renal arter*" OR "accessory renal arter*" OR "double renal arter*").

ClinicalTrials.gov

Date last searched: 31 October 2025

Condition or disease: Kidney Transplantation

Other terms: living donor AND multiple renal arteries

Study status: All

WHO International Clinical Trials Registry Platform (ICTRP)

Date last searched: 31 October 2025

Condition: Kidney Transplantation

Keywords: living donor, multiple renal arteries

Additional search methods

The reference lists of all included studies and relevant review articles were manually screened to identify additional eligible studies not captured by the electronic searches.

Table S1 Input Data and Contributing Studies for Delayed Graft Function Meta-analysis (Studies with Extractable Comparative LDKT Data Only).

Study (Year)	Donor Type	DGF Definition	MRA (events/total)	SRA (events/total)	Data Source	Notes
Modi 2024 [1]	Living donor	Dialysis within 7 days	2/56	2/183	Reported raw counts	-
Sevmis 2021 [2]	Mixed (LDKT extracted)	Dialysis within 7 days	0/30	7/159	Derived from percentages	Percentages converted to counts. Only extractable living-donor kidney transplantation data were included for quantitative synthesis.
Garcia 2021 [3]	Living donor	Dialysis within 7 days	0/49	0/161	Reported raw counts	Zero-event studies were retained using continuity correction during meta-analysis.

Table S2 Input Data and Contributing Studies for 1-Year Graft Survival Meta-analysis (Studies with Extractable Comparative LDKT Data Only).

Study (Year)	Donor Type	Timepoint	MRA (graft loss/total)	SRA (graft loss/total)	Data Source
Modi 2024 [1]	Living donor	12 months	2/56	5/183	Reported raw counts
Sevmis 2021 [2]	Mixed (LDKT extracted)	12 months	2/30	7/159	Derived from reported survival
Garcia 2021 [3]	Living donor	12 months	2/49	8/161	Reported raw counts
Panis 2025 [4]	Living donor	12 months	4/75	11/176	Reported raw counts

Table S3 Input Data and Contributing Studies for eGFR at 12 Months Meta-analysis (Studies with Extractable Comparative LDKT Data Only).

Study (Year)	Donor Type	MRA mean ± SD	n (MRA)	SRA mean ± SD	n (SRA)	Unit
Modi 2024 [1]	Living donor	65.0 ± 18.0	56	66.0 ± 19.0	183	mL/min/1.73 m^2
Sevmis 2020 [2]	Mixed (LDKT extracted)	70.0 ± 22.0	30	72.0 ± 23.0	159	mL/min/1.73 m^2
Krishna 2020 [5]	Living donor	68.0 ± 20.0	92	70.0 ± 21.0	330	mL/min/1.73 m^2
Panis 2025 [4]	Living donor	72.0 ± 19.0	75	74.0 ± 18.0	176	mL/min/1.73 m^2

References

1. Modi A, Sadasushi N, Gupta M, Gupta HL, Sharma A, Sadasukhi TC, et al. Multiple renal arteries in live donor renal transplantation and impact on graft function and outcome: A retrospective study. Indian J Transplant. 2024; 18: 116-120.
2. Sevmis M, Demir ME, Merhametsiz O, Aktas S, Sevmis S, Uyar M. Grafts with multiple renal arteries in kidney transplantation. Transplant Proc. 2021; 53: 933-940.
3. Garcia LE, Parra N, Gaynor JJ, Baker L, Guerra G, Ciancio G. Clinical outcomes following single vs multiple vessel living-donor kidney transplantation: A retrospective comparison of 210 patients. Front Surg. 2021; 8: 693021.
4. Panis A, De La Taille A, Parier B, Drouin SJ, Matignon M, Anglicheau D, et al. Does the sacrifice of accessory renal arteries impair functional outcomes after living donor kidney transplantation? A retrospective single-center cohort study of 251 recipients. Clin Transplant. 2025; 39: e70229.
5. Krishna A, Maqbool U, Jain M, Prakash O, Kumar S, Seenu V. Outcomes of complex V/S simple vascular anatomy grafts following living donor renal transplant: Experience from a tertiary care center. J Clin Nephrol Ren Care. 2020; 6: 59.