

Table 2. Effect of intraoperative fluid protocols on postoperative outcomes in adult renal transplantation recipients. Summary of the meta-analyses with GRADE rating of evidence.

Outcome variable	No. of studies	No. of subjects		MD or RR (95% CI)	P value	I ² ^b (P value)	Random or fixed effects	Quality of evidence (GRADE)
		GDT	Control ^a					
Postoperative haemodialysis	7	308	303	RR = 0.64 (0.33 to 1.24)	0.19	52% (P = 0.06)	Random	Low
POD 0 urine output, L	3	194	187	MD = -0.05 (-0.30 to 0.19)	0.66	0% (P = 0.93)	Fixed	Moderate
POD 1 urine output, L	5	247	240	MD = 0.03 (-0.32 to 0.37)	0.88	36% (P = 0.18)	Random	Moderate
POD 3 urine output, L	3	192	185	MD = 0.15 (-0.28 to 0.58)	0.50	78% (P = 0.01)	Random	Very Low
POD 7 urine output, L	2	143	137	MD = 0.39 (-0.18 to 0.96)	0.18	69% (P = 0.08)	Random	Very Low
POD 0 serum creatinine, mg.dL ⁻¹	6	275	271	MD = -0.29 (-0.67 to 0.09)	0.13	0% (P = 0.85)	Fixed	Moderate
POD 1 serum creatinine, mg.dL ⁻¹	7	308	304	MD = -0.27 (-0.91 to 0.38)	0.42	72% (P = 0.002)	Random	Low
POD 3 serum creatinine, mg.dL ⁻¹	6	273	269	MD = -0.28 (-0.88 to 0.32)	0.37	58% (P = 0.04)	Random	Low
POD 7 serum creatinine, mg.dL ⁻¹	6	273	269	MD = -0.38 (-0.85 to 0.09)	0.11	49% (P = 0.08)	Random	Low
POD 0 serum urea, mmol.L ⁻¹	2	84	83	MD = -1.29 (-3.83 to 1.26)	0.32	0% (P = 0.39)	Fixed	Moderate
POD 1 serum urea, mmol.L ⁻¹	4	137	136	MD = -1.01 (-3.26 to 1.23)	0.38	0% (P = 0.61)	Fixed	Moderate
POD 3 serum urea, mmol.L ⁻¹	3	102	101	MD = -1.95 (-6.12 to 2.21)	0.36	44% (P = 0.17)	Random	Low
POD 7 serum urea, mmol.L ⁻¹	2	53	53	MD = -2.55 (-12.43 to 7.34)	0.61	68% (P = 0.08)	Random	Low
Tissue oedema ^c	4	199	199	RR = 0.31 (0.12 to 0.79)	0.01	0% (P = 0.90)	Fixed	Low
Respiratory complications ^d	7	308	303	RR = 0.39 (0.17 to 0.90)	0.03	0% (P = 0.67)	Fixed	Low
Cardiovascular complications ^e	2	59	57	RR = 1.03 (0.02 to 49.30)	0.99	86% (P = 0.007)	Random	Very Low
Serum lactate, mmol.L ⁻¹	2	70	75	MD = 4.90 (-5.30 to 15.10)	0.35	100% (P < 0.00001)	Random	Low
Length of stay, days	3	94	92	MD = -0.14 (-0.34 to 0.06)	0.17	0% (P = 0.99)	Fixed	Low

Table 2. Effect of intraoperative fluid protocols on postoperative outcomes in adult renal transplantation recipients. Summary of the meta-analyses with GRADE rating of evidence. (Cont'd)

Outcome variable	No. of studies	No. of subjects		MD or RR (95% CI)	P value	I ² ^b (P value)	Random or fixed effects	Quality of evidence (GRADE)
		GDT	Control ^a					
Intraoperative MAP at reperfusion, mmHg	6	248	242	MD = -0.33 (-1.8 to 1.17)	0.67	32% (P = 0.20)	Random	Low

CI: confidence interval; GDT: goal-directed therapy; GRADE: Grading of Recommendations Assessment, Development and Evaluation; MAP: mean arterial pressure; MD: mean difference; POD: postoperative day; RR: risk ratio

^a Routine administration of fluids and/or inotropic drugs based on either a standard institutional-based fluid protocol or targeting non-flow-related haemodynamic parameters.

^b Heterogeneity coefficient >40% was considered significant.

^c Clinical and/or radiological signs of excessive fluid accumulation.

^d Need for postoperative supplemental oxygen, prolonged mechanical ventilation, acute respiratory distress syndrome, and/or respiratory failure.

^e New-onset arrhythmia, myocardial infarction, pulmonary embolism, cardiogenic pulmonary oedema or cardiac arrest.

Population: adult (age ≥18 years) end-stage renal failure patients undergoing first single-organ renal transplantation surgery.

Intervention: GDT protocols.

Control: conventional fluid therapy protocols.

Values in bold are statistically significant.