STEROID AVOIDANCE OR WITHDRAWAL FOR PANCREAS AND PANCREAS WITH KIDNEY TRANSPLANT RECIPIENTS

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- Pancreas or kidney-pancreas transplantation improve outcomes in diabetic patients with kidney failure, but chronic steroid treatment carries risks of adverse events.
- We aimed to systematically assess safety and efficacy of: steroid withdrawal (SW) or avoidance (SA) versus continuing steroid maintenance in patients receiving pancreas transplant alone (PTA), simultaneous pancreas kidney transplantation (SPK) or pancreas after kidney transplantation (PAK) with sequential adjustment for a number of covariates.

METHODS

SEARCH METHODS

• We searched the Cochrane Renal Group's Specialised using Register relevant search terms.

SELECTION CRITERIA

- We included:
 - randomised controlled trials (RCTs)
 - cohort studies

of steroid use of less than 14 days (SA) or versus steroid use during more than 14 days (SW) in PTA, SPK or PAK recipients.

DATA COLLECTION AND ANALYSIS

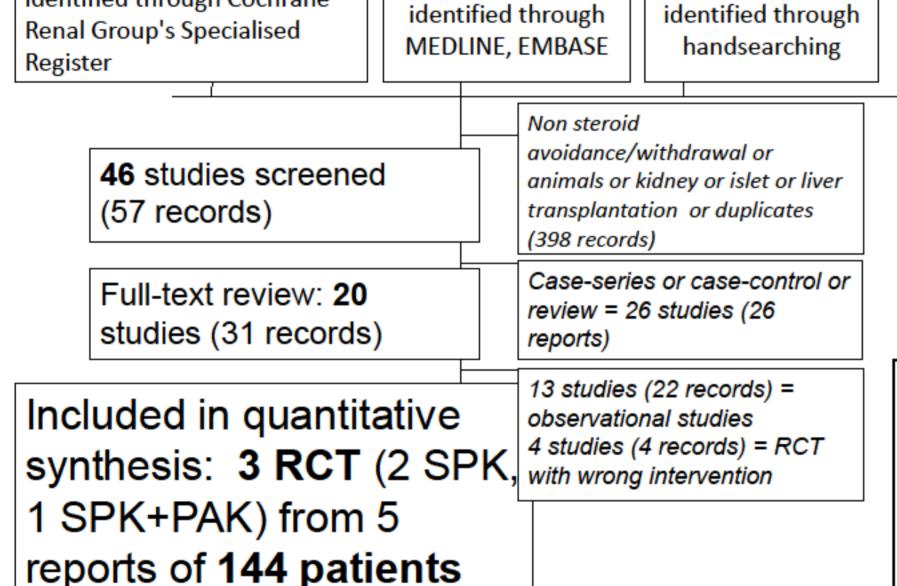
- Two investigators independently identified studies for inclusion, critically appraised methodology and abstracted study data.
- Metaanalyses used random effects results expressed as risk ratios (RR) or mean difference (MD) with 95% confidence interval (CI).
- Cohort studies were not meta-analysed, but their findings summarised descriptively

RESULTS

DESCRIPTION OF STUDIES:

12 records

identified through Cochrane



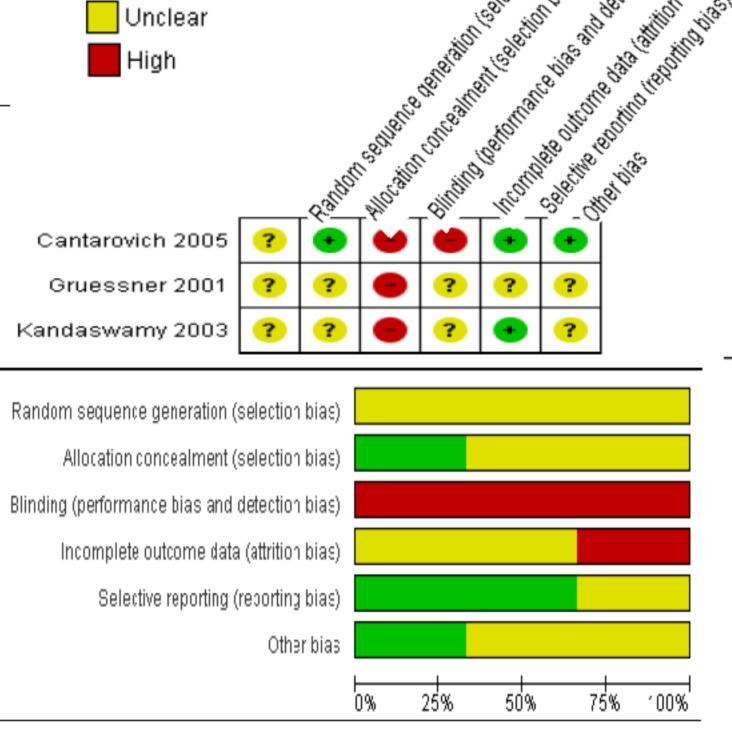
436 records

7 records



Low risk

Gruessner 2001



Kandaswamy 2003

EFFECTS OF INTERVENTIONS:

Forest plots with the 3 main outcomes in the intervention steroid avoidance versus late steroid withdrawal (after day 14 post-transplant):

Death at 1 year

Steroid avoidance

Steroid avoidance

Late steroid withdrawal

Study or Subgroup Events Total Events Total (95% CI) M-H, Random, 95% CI M-H, Random, 95% CI Cantarovich 2005 1 25 0 25 42.3% 3.00 [0.13, 70.30] 40.00 40.00 40.00 1.05 [0.07, 15.66] 40.00 40.00 1.05 [0.07, 15.66] 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 40.00 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>									
Kandaswamy 2003 1 19 1 20 57.7% 1.05 [0.07, 15.66] Total (95% CI) 45 100.0% 1.64 [0.21, 12.75] Total events 2 1 Heterogeneity: a Tau² = 0.00; Chi² = 0.25, df = 1 (P = 0.62); I² = 0% Test for overall effect: 7 = 0.47 (P = 0.64)	Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI	
Total (95% CI) 44 45 100.0% 1.64 [0.21, 12.75] Total events 2 1 Heterogeneity: ₀Tau² = 0.00; Chi² = 0.25, df = 1 (P = 0.62); I² = 0% 0.01 0.1 1 10 100 Test for overall effect: 7 = 0.47 (P = 0.64) 0.01 0.1 1 10 100	Cantarovich 2005	1	25	0	25	42.3%	3.00 [0.13, 70.30]		
Total events 2 1 Heterogeneity: Tau ² = 0.00; Chi ² = 0.25, df = 1 (P = 0.62); I ² = 0% Test for overall effect: 7 = 0.47 (P = 0.64)	Kandaswamy 2003	1	19	1	20	57.7%	1.05 [0.07, 15.66]		
Heterogeneity: Tau ² = 0.00; Chi ² = 0.25, df = 1 (P = 0.62); I ² = 0% Test for everall effect: 7 = 0.47 (P = 0.64)	Total (95% CI)		44		45	100.0%	1.64 [0.21, 12.75]		
Teet for everall effect: 7 = 0.47 (P = 0.64)	Total events	2		1					
		-	-	(P = 0.62); I ² = 0%					_

Risk Ratio

Risk Ratio

Risk Ratio

Risk Ratio

Outcomes reported in the RCT

			3 m	6 m	1 y	2 y	3 y	4 y	5 y	3 m	6 m	1 y	2 y	3 y	4 y	5 y	3 m	6 m	1 y	2 y	3 y	4 y	5 y
Death					•						•								•	•	•	•	•
	KIDNEY	Acute rejection									•												
Graft		Biopsy-proven																					
Rejection	DANCBEAS	Acute rejection									•												
	PANCREAS	Biopsy-proven																					
	KIDNEV	Censored for death			•														•				
Graft	Graft KIDNEY	Non censored for death			•														•				
Loss	DANCBEAG	Censored for death			•														•				
PANCREAS	PANCREAS	Non censored for death			•														•				
	Serum creating	nine (mg/dL)	•	•	•						•							•					
	Creatinine cle	earance (mL/min)																					
Worser 50%)		orsening proteinuria (increase > 0%)																					
Laboratory		Total (mg/dL)		•	•						•							•					
findings	Serum cholesterol	LDL (mg/dL)	•	•	•													•					
	CHOICSTOI	HDL (mg/dL)	•	•	•													•					
Т	Triglycerides	Triglycerides (mg/dL)		•	•						•							•					
HbA1C (%)				•	•													•					
	Mean blood p	ean blood pressure (mmHg)																					
	<u>n</u> antihyperter	n antihypertensive drugs																					
outcomes	Bone density	Bone density (% of variation)																					
	Weight gain (Kg)																					

Cantarovich 2005

Kidney acute rejection at 1 year

	Steroid avoid	lance	Late steroid with	ıdrawal		Risk Ratio	Risk Ratio					
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI					
Cantarovich 2005	2	24	1	25	100.0%	2.08 [0.20, 21.50]						
Total (95% CI)		24		25	100.0%	2.08 [0.20, 21.50]						
Total events	2		1									
Heterogeneity: Not app	plicable						0.001 0.1 1 10	1000				
Test for overall effect: 2	Z= 0.62 (P = 0	.54)					Steroid avoidance Late steroid					

Late steroid withdrawal

Graft failure (uncensored for death) at 1 year

Risk Ratio

Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H	I, Rando	om, 95%	CI
Cantarovich 2005	1	25	0	25	20.0%	3.00 [0.13, 70.30]			-	
Kandaswamy 2003	2	19	4	20	80.0%	0.53 [0.11, 2.55]			_	
Total (95% CI)		44		45	100.0%	0.75 [0.18, 3.05]			-	
Total events	3		4							
Heterogeneity: Tau² = 0 Test for overall effect: 2	-	_	P = 0.33); I ^z = 0%				0.001 0 Steroid avo	.1 1 idance	10 Late ste	1000 roid withdraw

- Evidence for the benefits and harms of SW in pancreas or kidney-pancreas transplantation is sparse with only three RCT of 144 patients identified.
- These RCTs showed no difference in mortality, graft survival or rejection in steroid-sparing strategies but firm conclusions are not possible.
- The 13 observational studies findings concur with the evidences found in the RCTs.
- There is not enough evidence to recommend steroid withdrawal in pancreas-kidney transplantation, although the small number of studies showed no differences between groups.





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