GFEV | GROUPE FRANÇAIS D'ÉTUDE DES VASCULARITES

Vascularites à ANCA
Place des Echanges Plasmatiques

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The effects of plasma exchange in patients with ANCA-associated vasculitis: an updated systematic review and meta-analysis

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WHAT IS ALREADY KNOWN ON THIS TOPIC

Plasma exchange has been used to treat some patients with anti-neutrophil cytoplasm antibody (ANCA)-associated vasculitis (AAV) since the 1980s on the basis of biological rationale and small clinical trials

WHAT THIS STUDY ADDS

This meta-analysis compiles the most recent and detailed data available from randomised controlled trials examining the effects of plasma exchange on important outcomes in patients with AAV

It found plasma exchange, when added to standard therapies, reduced the risk of end stage kidney disease at one year, regardless of baseline kidney function, and increased the risk of serious infections, a previously unrecognised effect

Plasma exchange did not change the risk of death

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Total randomized trials included

9 Mortality (6 at 12 months and 8 at longer term)
9 ESKD (7 at 12 months and 7 at longer term)
7 Serious infection (4 at 12 months and 6 at longer term)
1 Remission (1 trial at 12 months)
3 Relapse (3 trials at longer term)
Health Related Quality of Life (1 at 12 months)
Serious Adverse Events (1 trial at 12 months and 3 at longer term)

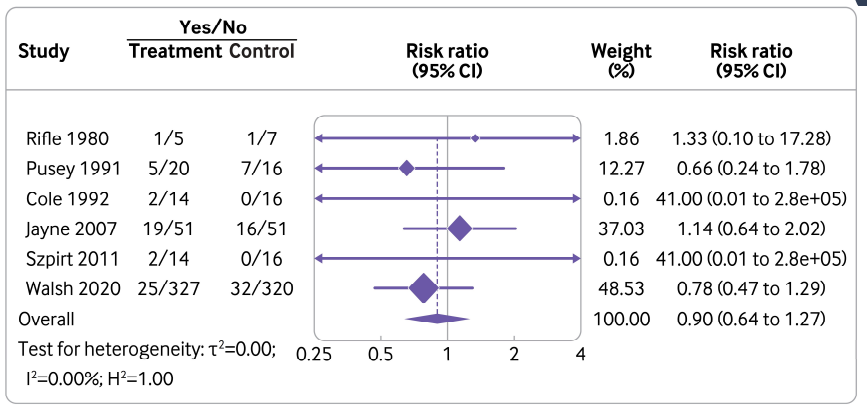
9 essais randomisés 1060 participants

Table 1 | Characteristics of trials of plasma exchange for treatment of ANCA-associated vasculitis and participants included for meta-analysis

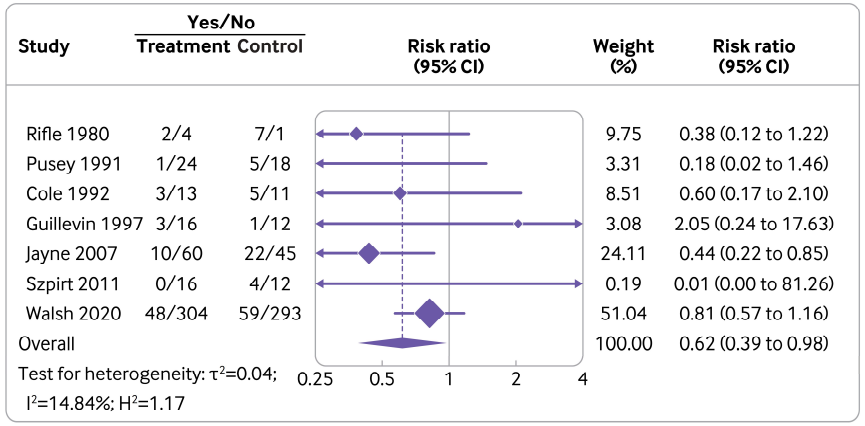
		Plasma exchange			Participants					Baseline creatinine (µmol/L)		Baseline dialysis (%)		
						Mean age (years)		Female (%)						
Study	Follow-up (months)	Method	No of treatments	Volume/ treatment	No	wPLEX	Ctrl	PLEX	Ctrl	PLEX	Ctrl	PLEX	Ctrl	Lung haem
Rifle 1980	22	Centrifuge	5 in 5 days + additional for non-response	1.5 plasma volumes	14	41	52	50	25	893	1140	67	88	No
Mauri 1985	36	Centrifuge and filter	6 in 12 days + additional for non-response	3.5 L	22	NR	NR	NR	NR	1193	1158	50	50	NR
Pusey 1991	58	Centrifuge	5 in 7 days + additional for non-response	4 L	48	52	51	36	39	793	637	44	34	Yes
Cole 1992	12	Centrifuge	≥10 in 16 days	1 plasma volume	32	NR	NR	NR	NR	634	769	25	43	NR
Guillevin 1997	12	Centrifuge and filter	9 or 12 at 3 times/week	60 mL/kg	32	47	62	47	38	439	287	32	15	NR
Zauner 2002	127	NR	3 + <9 for non-response	40 mL/kg	39	55	56	29	22	NR	NR	NR	NR	Yes
Jayne 2007, Walsh 2013	12, 47	Centrifuge and filter	7 in 14 days	60 mL/kg	137	67	66	41	36	701	732	67	71	Yes
Szpirt 2010	60	Filter	6 + 3-6 for persistent ANCA	4 L	32	58	56	25	19	262	250	13	25	Yes
Walsh 2020	35	Centrifuge and filter	7 in 14 days	60 mL/kg	704	63	64	42	45	327	336	19	21	Yes

Effet des EP

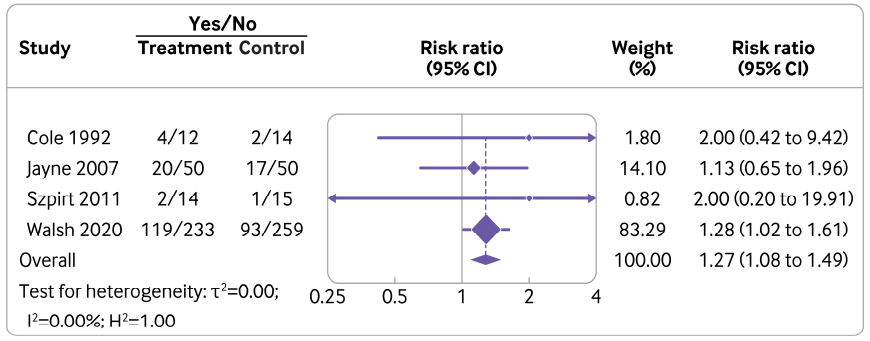
Mortalité toute cause à M12



IRC Terminale à M12



Infection sévère à M12



RAPID RECOMMENDATIONS

Plasma exchange and glucocorticoid dosing for patients with ANCA-associated vasculitis: a clinical practice guideline

Linan Zeng, [1,2] Michael Walsh, [2,3,4,5] Gordon H Guyatt, [2,4] Reed A C Siemieniuk, [2] David Collister, [2,3,4,5] Michelle Booth, [6] Paul Brown, [6] Lesha Farrar, [7] Mark Farrar, [7] Tracy Firth, [7] Lynn A Fussner, [8] Karin Kilian, [9,10] Mark A Little, [11,12] Thomas A Mavrakanas, [13] Reem A Mustafa, [2,14] Maryam Piram, [15,16] Lisa K Stamp, [17] Yingqi Xiao, [2,18] Lyubov Lytvyn, [2] Thomas Agoritsas, [2,19] Per O Vandvik, [20] Alfred Mahr[21]

RECOMMENDATIONS

The guideline panel makes a weak recommendation against plasma exchange in patients with low or low-moderate risk of developing end stage kidney disease (ESKD), and a weak recommendation in favour of plasma exchange in patients with moderate-high or high risk of developing ESKD. For patients with pulmonary haemorrhage without renal involvement, the panel suggests not using plasma exchange (weak recommendation). The panel made a strong recommendation in favour of a reduced dose rather than standard dose regimen of glucocorticoids, which involves a more rapid taper rate and lower cumulative dose during the first six months of therapy.

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Organisation and year of publication	Recommendation of plasma exchange (PLEX) in		Recommendation of tapering regimen of glucocorticoids in induction therapy
	AAV and kidney involvement	AAV and pulmonary haemorrhage	
ASFA 2020[14]	*For patients with creatinine ≥500 µmol/L:* In favour of PLEX as accepted second line therapy alone or as adjuvant; support use of PLEX in select patients with biopsy proven RPGN (strong recommendation based on moderate quality evidence). *For patients with creatinine <500 µmol/L:* Optimal role not established, decision should be individualised (weak recommendation based on low or very low quality evidence)	Consider PLEX for pulmonary haemorrhage a class I indication (accepted first line therapy) (strong recommendation based on low quality evidence)	No recommendation
KDIGO 2020[15]	Against routine use of PLEX for patients with GFR <50 mL/min/1.73 m2; PLEX can be considered for more severe presentations (serum creatinine >500 µmol/L, especially if oliguric)	In favour of PLEX for AAV and diffuse alveolar haemorrhage plus hypoxaemia	No explicit recommendation, but commented that (*a*) in most RCTs oral glucocorticoids started at 1 mg/kg/day; (*b*) PEXIVAS trial showed more rapid reduction was as effective but safer than "standard" corticosteroid tapering regimen
ARCH 2020[16]	In favour of PLEX for AAV and rapidly progressive glomerulonephritis	In favour of PLEX for AAV and pulmonary haemorrhage	No recommendation
Japan Research Committee of the Ministry of Health, Labour, and Welfare 2017[17]	In favour of PLEX for AAV and severe renal impairment	No recommendation	No recommendation
BSR 2017[18]	In favour of PLEX for AAV and rapidly progressive glomerulonephritis with serum creatinine >5.8 mg/dL	Insufficient evidence to support PLEX for AAV presenting with pulmonary haemorrhage, PLEX possibly beneficial	Prednisone or prednisolone prescribed at initial dose of 0.5-1.0 mg/kg/day (max 80 mg/day) for 1-4 weeks followed by tapering 10 mg every 2-4 weeks until 20 mg/day. Then taper dose 2.5-5.0 mg every 2-4 weeks until complete withdrawal
EULAR/ERA-EDTA 2016[19]	In favour of PLEX for AAV and serum creatinine level ≥500 mmol/L due to rapidly progressive glomerulonephritis in new or relapsing disease	In favour of PLEX for AAV and severe diffuse pulmonary haemorrhage	No recommendation
CanVasc 2016[20]	Against PLEX as first line therapy for AAV and severe renal involvement (GFR <50 mL/min). PLEX may be a reasonable adjuvant therapy if patients clinically deteriorate	Against PLEX as first line therapy for AAV and pulmonary haemorrhage. PLEX may be a reasonable adjuvant therapy if patients clinically deteriorate	No recommendation
BSR/BHPR 2014[21]	In favour of PLEX for AAV and severe renal failure (serum creatinine >500 mmol/L)	In favour of PLEX for AAV and pulmonary haemorrhage	Glucocorticoids usually given as daily oral prednisolone, initially at high doses (1 mg/kg up to 60 mg) with dose rapidly reduced to 15 mg prednisolone at 12 weeks

Risk group for end stage kidney disease (ESKD)	LOW	LOW TO MODERATE	MODERATE TO HIGH	HIGH
Baseline serum creatinine level	≤ 200 µmol/L	>200-300 µmol/L	>300-500 µmol/L	> 500 µmol/L
Baseline risk of developing ESKD at 1 year	≤ 2.5%	>2.5-7.5%	>7.5-25.0%	>25.0%