

APPENDIX 2

Results of the general systematic literature search: individual adverse effects

Abbreviations:

AE	Adverse event
AZA	Azathioprine
BMD	Bone mineral density
Ca	Calcium
CD	Crohn's disease
CI	Confidence interval
CYC	Cyclophosphamide
Cyclo	Cyclosporin
Different	Predefined rheumatic and immune diseases (these could include inflammatory respiratory diseases such as COPD, asthma, sarcoidosis)
DMARD	Disease-modifying antirheumatic drug
GC	Glucocorticoid
GC+	Patients on GC therapy
GC-	Patients not on GC therapy
GCA	Giant cell arteritis
HCQ	Hydroxychloroquine
IBD	Inflammatory bowel disease
IM	Intramuscular
IP	Inflammatory polyarthritis
IV	Intravenous
LEF	Leflunomide
MFP	Monofluorophosphate
MMF	Mycophenolate mofetil
MP	Methylprednisolone
MP induction	3 gram methylprednisolone
MPA	Microscopic polyangiitis
MTX	Methotrexate
n	Number
N/A	Not applicable
NSAID	Non-steroidal anti-inflammatory drug
PAN	Polyarteritis nodosa
PMR	Polymyalgia rheumatica
PR	Predniso(lo)ne
RA	Rheumatoid arthritis
rh IL11	Recombinant human interleukin-11
SLE	Systemic lupus erythematosus
SSZ	Sulphasalazine
UC	Ulcerative colitis
Vit D	Vitamin D

Note:

- Events/patient year are calculated over the complete follow up time.
- The mean daily dose is calculated by dividing the cumulative dose during the study by the duration of treatment according to the study protocol.

Adverse event: Moon face											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Messina, O.D. 1992(A)	1b	RA	8	x	PR/NSAID for 1 year	0.63 (5/8)			3650	
Chronic medium	Messina, O.D. 1992(B)	1b	RA	8	x	Deflazacort/NSAID for 1 year	0.00 (0/8)			3650	
Chronic medium	van Schaardenburg, D. 1995	1b	RA	28	28	PR vs HCQ for 2 years	0.05 (3/28)	0.00 (0/28)	7.8 (0.4-159)	5840	
Chronic medium	Joint Committee Report, 1959*	1b	RA	41	36	PR vs Aspirin for 2 years	0.33 (27/41)	0.00 (0/36)	138 (7.9-2423)	9928	
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.06 (3/30)			3266	
Chronic medium	Rhodes, J.M. 2007(A)*	1b	UC	59	x	Predocol 40 mg/Mesalazine/AZA for 0.5 year	0.17 (5/59)			4500	
Chronic high	Rhodes, J.M. 2007(B)*	1b	UC	61	x	Predocol 60 mg/Mesalazine/AZA for 0.5 year	0.23 (7/61)			6840	
Stepdown	Rhodes, J.M. 2007(C)*	1b	UC	61	x	PR/Mesalazine/AZA for 0.5 year	0.49 (15/61)			1365	
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	1.38 (20/58)			3605	
Stepdown	Rutgeerts, P. 1994	1b	CD	88	x	PR vs Budesonide (low dose) for 0.2 year	1.70 (30/88)			1680	
Stepdown	Bar-Meir, S. 1998	1b	CD	101	x	PR 40 mg vs Budesonide (low dose) for 0.16 year	2.04 (33/101)			1295	
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.07 (3/21)			5490	
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.14 (6/21)			5490	
Stepdown	Chevalet, P. 2000(A)	1b	GCA	61	x	once MP 240 mg IV/0.7 mg/kg PR/Ca-Vit D for 1 year	0.11 (7/61)			5777	
Stepdown	Chevalet, P. 2000(B)	1b	GCA	53	x	0.7 mg/kg PR/Ca-Vit D for 1 year	0.11 (6/53)			5578	
Stepdown	Chevalet, P. 2000(C)	1b	GCA	50	x	once MP 240 mg IV/0.5 mg/kg PR/Ca-Vit D for 1 year	0.10 (5/50)			5168	
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.17 (3/9)			5908	
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.13 (3/12)			6469	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.79 (11/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.77 (10/13)			3100	
Stepdown	Bootsma, H. 1995(A)	1b	SLE	22	x	PR±CYC/Ca (early treatment) for 3 years	0.11 (7/22)			8052	
Stepdown	Bootsma, H. 1995(B)	1b	SLE	24	x	PR±CYC/Ca (conventional treatment) for 3 years	0.03 (2/24)			4515	
IM	Choy, E.H. 2005	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.03 (3/48)	0.00 (0/43)	6.7 (0.3-133)	3600	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		174	11.9	0.00-0.63		2 studies. 69 vs 64		35 (4.5-282) 3.4			
Chronic high		61	37.5	0.23							
Stepdown		608	14.3	0.03-2.04							
IM		48	4.9	0.03		1 study. 48 vs 43		6.7 (0.3-133) 1.2			

* the AE could be recorded more than one time in one patient

Adverse event: Buffalo hump										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	Messina, O.D. 1992(A)	1b	RA	8	x	PR/NSAID for 1 year	0.63 (5/8)			3650
Chronic medium	Messina, O.D. 1992(B)	1b	RA	8	x	Deflazacort/NSAID for 1 year	0.00 (0/8)			3650
Stepdown	Rutgeerts, P. 1994	1b	CD	88	x	PR vs Budesonide (low dose) for 0.2 year	0.17 (3/88)			1680
Stepdown	Bar-Meir, S. 1998	1b	CD	101	x	PR 40 mg vs Budesonide (low dose) for 0.16 year	0.62 (10/101)			1295
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.14 (2/58)			3605
Summary		All studies								
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year						
Chronic medium		16	10.0	0.00-0.63						
Stepdown		247	29.8	0.14-0.62						

Adverse event: Hirsutism										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	Messina, O.D. 1992(A)	1b	RA	8	x	PR/NSAID for 1 year	0.63 (5/8)			3650
Chronic medium	Messina, O.D. 1992(B)	1b	RA	8	x	Deflazacort/NSAID for 1 year	0.00 (0/8)			3650
Chronic medium	Joint Committee Report, 1959*	1b	RA	41	36	PR vs Aspirin for 2 years	0.14 (12/41)	0.08 (6/36)	2.1 (0.7-6.2)	9928
Chronic medium	Rhodes, J.M. 2007(A)*	1b	UC	59	x	Predocol 40 mg/Mesalazine/AZA for 0.5 year	0.10 (3/59)			4500
Chronic high	Rhodes, J.M. 2007(B)*	1b	UC	61	x	Predocol 60 mg/Mesalazine/AZA for 0.5 year	0.07 (2/61)			6840
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.21 (3/58)			3605
Stepdown	Bar-Meir, S. 1998	1b	CD	101	x	PR 40 mg vs Budesonide (low dose) for 0.16 year	0.50 (8/101)			1295
Stepdown	Rutgeerts, P. 1994	1b	CD	88	x	PR vs Budesonide (low dose) for 0.2 year	0.11 (2/88)			1680
Stepdown	Rhodes, J.M. 2007(C)*	1b	UC	61	x	PR/Mesalazine/AZA for 0.5 year	0.33 (11/67)			1365
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.06 (1/9)			5908
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.04 (1/12)			6469
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value		
Chronic medium		116	14.6	0.00-0.63		1 study. 41 vs 36	2.1 (0.7-6.2)	1.3		
Chronic high		61	37.5	0.07						
Stepdown		329	19	0.04-0.50						

* the AE could be recorded more than one time in one patient

Adverse event: Alopecia										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	van der Veen, M.J. 1996(A) [§]	1b	PMR/GCA	40	x	PR/Ca for 1 year (follow up 2 years)	0.00 (0/40)			2947
Chronic medium	van der Veen, M.J. 1996(B) [§]	1b	PMR/GCA	40	x	PR/Ca/MTX for 1 year (follow up 2 years)	0.01 (1/40)			2400
Chronic medium	Bakker, M.F. 2012 [§]	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.04 (10/117)	0.07 (17/119)	0.6 (0.2-1.3)	7300
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.00 (0/36)			2600
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.02 (1/36)			2600
Stepdown	Spiers, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.06 (1/9)			5908
Stepdown	Spiers, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.04 (1/12)			6469
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.02 (1/21)			5490
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.05 (2/21)			5490
Stepdown	de Groot, K. 2009	1b	Vasculitis	149	x	PR/CYC IV or CYC oral for 1.5 years	0.01 (2/149)			7587
Stepdown	Wang, H.Y. 2003(A)	2a	SLE	70	x	PR/LEF for 0.5 year	0.31 (11/70)			5894
Stepdown	Wang, H.Y. 2003(B)	2a	SLE	40	x	PR/CYC for 0.5 year	0.20 (7/70)			5894
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value	
Chronic medium		269	10.6	0.00-0.04		1 study. 117 vs 119		0.6 (0.2-1.3)	1.4	
Stepdown		322	15.8	0.01-0.31						

[§] hair loss

Adverse event: Skin hemorrhage										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.07 (4/30)			3266
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.01 (1/41)	1.0 (0.1-17)	7300
Chronic medium	Joint Committee Report, 1959	1b	RA	41	36	PR vs Aspirin for 2 years	0.04 (3/41)	0.01 (1/36)	2.8 (0.3-28)	9928
Stepdown	Spiers, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.06 (1/9)			5908
Stepdown	Spiers, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.17 (4/12)			6469
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.48 (7/58)			3605
IM	Dasgupta, B. 1998(B)	1b	PMR	30	x	MP IM every 3 weeks for 1.8 years	0.19 (10/30)			1825
IM	Choy, E.H. 2005	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.03 (3/48)	0.00 (0/43)	6.7 (0.3-133)	3600
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value	
Chronic medium		111	9.5	0.01-0.07		2 studies. 81 vs 77		1.9 (0.3-11)	0.7	
Stepdown		79	18.8	0.06-0.48						
IM		78	3.9	0.03-0.19		1 study. 48 vs 43		6.7 (0.3-133)	1.2	

Adverse event: Striae										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.00 (0/58)			3605
Stepdown	Rutgeerts, P. 1994	1b	CD	88	x	PR vs Budesonide (low dose) for 0.2 year	0.11 (2/88)			1680
Stepdown	Bar-Meir, S. 1998	1b	CD	101	x	PR 40 mg vs Budesonide (low dose) for 0.16 year	0.12 (2/101)			1295
Summary		All studies								
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year						
Stepdown		247	29.8	0.00-0.12						

Adverse event: Skin changes										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	van Everdingen, A.A. 2002#	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.04 (3/40)	0.02 (2/41)	1.6 (0.3-10)	7300
Chronic medium	Bakker, M.F. 2012□	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.04 (10/117)	0.05 (11/119)	0.9 (0.4-2.3)	7300
Chronic medium	Empire, 1957‡	1b	RA	49	50	Cortisone vs Aspirin for 3 years	0.01 (1/49)	0.00 (0/50)	3.1 (0.1-79)	14782
Stepdown	Boers, M. 1997	1b	RA	76	79	PR/SSZ/MTX vs SSZ for >1 year	0.07 (5/76)	0.08 (6/79)	0.9 (0.3-2.9)	2345
Stepdown	Pagnoux, C. 2008(A)¥	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/AZA for 2.2 years	0.01 (1/63)			10760
Stepdown	Pagnoux, C. 2008(B)¥	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/MTX for 2.2 years	0.01 (1/63)			10760
IM	Corkill, M.M. 1990□	1b	RA	35	24	MP 120 mg 3x/NSAID/GOLD vs Placebo/NSAID/GOLD for 0.5 year	0.11 (2/35)	0.00 (0/24)	3.7 (0.2-80)	450
Summary		All studies							Placebo-controlled studies	
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year	GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value		
Chronic medium		206	11.2	0.01-0.04	3 studies. 206 vs 210		1.0 (0.5-2.2)	0.05		
Stepdown		202	11.1	0.01-0.07	1 study. 76 vs 79		0.9 (0.3-2.9)	-0.2		
IM		35	2.5	0.11	1 study. 35 vs 24		3.7 (0.2-80)	0.8		

ulcer cruris, exanthema, petechiae; ‡ dermatitis; ¥ cutaneous eruption; □ pruritus

Adverse event: Weight gain (numerical)										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	van der Veen, M.J. 1996(A)‡	1b	PMR/GCA	40	x	PR/Ca for 1 year (follow up 2 years)	0.06 (5/40)			2947
Chronic medium	van der Veen, M.J. 1996(B)‡	1b	PMR/GCA	40	x	PR/Ca/MTX for 1 year (follow up 2 years)	0.14 (11/40)			2400
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.04 (2/36)			2600
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.08 (4/36)			2600
Chronic medium	Tait, T.J. 1994	3	RA	15	x	PR/NSAID±DMARDs for 0.9 year	0.07 (1/15)			1680
Chronic medium	Messina, O.D. 1992(A)	1b	RA	8	x	PR/NSAID for 1 year	0.63 (5/8)			3650
Chronic medium	Messina, O.D. 1992(B)	1b	RA	8	x	Deflazacort/NSAID for 1 year	0.00 (0/8)			3650
Stepdown	Jover, J.A. 2001(A)*	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.17 (7/21)			5490
Stepdown	Jover, J.A. 2001(B)*	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.21 (9/21)			5490
Stepdown	Bootsma, H. 1995(A)	1b	SLE	22	x	PR±CYC/Ca (early treatment) for 3 years	0.05 (3/22)			8052
Stepdown	Bootsma, H. 1995(B)	1b	SLE	24	x	PR±CYC/Ca (conventional treatment) for 3 years	0.03 (2/24)			4515
IM	Choy, E.H. 2005	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.00 (0/48)	0.01 (1/43)	0.3 (0.0-7.4)	3600
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value	
Chronic medium		183	9.8	0.00-0.63						
Stepdown		88	6.6	0.03-0.21						
IM		48	4.9	0.00		1 study. 48 vs 43		0.3 (0.0-7.4)	-0.7	

‡ ≥ 1kg, * > 5% increase in body weight

Adverse event: Diabetes mellitus											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Salvarani, C. 2007(A)	1b	PMR	28	x	PR for 0.33 year	0.00 (0/28)			910	
Chronic medium	Salvarani, C. 2007(B)	1b	PMR	23	x	PR/Infliximab for 0.33 year	0.13 (1/23)			910	
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.04 (2/36)			2600	
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.00 (0/36)			2600	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (1/117)	0.00 (1/119)	1.0 (0.1-16)	7300	
Chronic medium	van Everdingen, A.A. 2002*	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.03 (2/40)	0.01 (1/41)	2.1 (0.2-24)	7300	
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.01 (9/124)			>7900	
Stepdown	Chevalet, P. 2000(A)	1b	GCA	61	x	once MP 240 mg IV/0.7 mg/kg PR/Ca-Vit D for 1 year	0.03 (2/61)			5777	
Stepdown	Chevalet, P. 2000(B)	1b	GCA	53	x	0.7 mg/kg PR/Ca-Vit D for 1 year	0.06 (3/53)			5578	
Stepdown	Chevalet, P. 2000(C)	1b	GCA	50	x	once MP 240 mg IV/0.5 mg/kg PR/Ca-Vit D for 1 year	0.04 (2/50)			5168	
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.07 (3/21)			5490	
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.17 (7/21)			5490	
Stepdown	Hernandes-Garcia C, 1994	2b	GCA	11	x	PR/MTX for 2.5 years	0.18 (5/11)			3400	
Stepdown	Bootsma, H. 1995(A)	1b	SLE	22	x	PR±CYC/Ca (early treatment) for 3 years	0.00 (0/22)			8052	
Stepdown	Bootsma, H. 1995(B)	1b	SLE	24	x	PR±CYC/Ca (conventional treatment) for 3 years	0.01 (1/24)			4515	
Stepdown	de Groot, K. 2009	1b	Vasculitis	149	x	PR/CYC IV or CYC oral for 1.5 years	0.05 (12/149)			7587	
IM	Choy, E.H. 2005	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.01 (1/48)	0.00 (0/43)	2.7 (0.1-69)	3600	
IM	Verstappen, S.M. 2010	1b	IP	133	132	MP IM 3x vs Placebo (±DMARD) (follow up 1 year)	0.01 (1/132)	0.00 (0/132)	3.0 (0.1-75)	300	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value		
Chronic medium		280	10.6	0.00-0.13		2 study. 157 vs 160		1.5 (0.3-9.3)	0.5		
Chronic high		124	43.3	0.01							
Stepdown		412	9.9	0.00-0.18							
IM		181	2.9	0.01		2 studies. 181 vs 175		2.9 (0.3-28)	0.9		

*from 5.1±0.6 SD to 5.9 SD 1.9 mmol/l

Adverse event: Hyperglycaemia											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Messina, O.D. 1992 (A)	1b	RA	8	x	PR/NSAID for 1 year	0.25 (2/8)			3650	
Chronic medium	Messina, O.D. 1992 (B)	1b	RA	8	x	Deflazacort/NSAID for 1 year	0.00 (0/8)			3650	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.06 (13/117)	0.04 (9/119)	1.5 (0.6-3.7)	7300	
Chronic medium	van der Veen, M.J. 1996(A)	1b	PMR/GCA	40	x	PR/Ca for 1 year (follow up 2 years)	0.09 (7/40)			2947	
Chronic medium	van der Veen, M.J. 1996(B)	1b	PMR/GCA	40	x	PR/Ca/MTX for 1 year (follow up 2 years)	0.06 (5/40)			2400	
Chronic medium	Ferraccioli, G.1996 (A)	1b	PMR	12	x	PR for 1 year	0.17 (2/12)			3200	
Chronic medium	Ferraccioli, G.1996 (B)	1b	PMR	12	x	PR/MTX for 1 year	0.00 (0/12)			1840	
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.06 (1/9)			5908	
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.04 (1/12)			6469	
Summary		All studies						Placebo-controlled studies			
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		237	8.4	0.00-0.25		1 study. 117 vs 119	1.5 (0.6-3.7)	0.9			
Stepdown		21	8.5	0.04-0.06							

Adverse event: Glucose intolerance											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Joint Committee Report, 1959*	1b	RA	41	36	PR vs Aspirin for 2 years	0.01 (1/41)	0.00 (0/36)	2.7 (0.1-68)	9928	
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.05 (2/21)			5490	
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.05 (2/21)			5490	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.07 (1/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.08 (1/13)			3100	
Summary		All studies						Placebo-controlled studies			
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		41	13.6	0.01		1 study. 41 vs 36	2.7 (0.1-68)	0.6			
Stepdown		69	10.6	0.05-0.08							

* glucosuria

Adverse event: Dyslipidemia											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Messina, O.D. 1992 (A)	1b	RA	8	x	PR/NSAID for 1 year	0.13 (1/8)			3650	
Chronic medium	Messina, O.D. 1992 (B)	1b	RA	8	x	Deflazacort/NSAID for 1 year	0.00 (0/8)			3650	
Stepdown	Boers, M. 2003	1b	RA	76	79	PR/SSZ/MTX vs SSZ for >1 year	*minus 4.5	*minus 4.5		2345	
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.00 (0/21)			5490	
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.05 (2/21)			5490	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.21 (3/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.23 (3/13)			3100	
IM	Choy, E.H. 2005	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.01 (1/48)	0.00 (0/43)	2.7 (0.1-69)	3600	
Summary		All studies						Placebo-controlled studies			
		GC+ patients (n)		Mean daily PR equivalent dose (mg)		Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value
Chronic medium		16		10.0		0.00-0.13					
Stepdown		145		9.8		0.00-0.23		1 study. 76 vs 79		N/A	N/A
IM		48		4.9		0.01		1 study. 48 vs 43		2.7 (0.1-69)	0.6

* arthrogenic index (Δ cholesterol/ HDL) after 28 weeks minus 5.1 in GC+ vs minus 1.4 in GC-

Adverse event: Myocardial infarction											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Verschueren, P. 2008(A)	2a	RA	19	x	PR/SSZ/MTX for 2 years	0.00 (0/19)			2603	
Chronic medium	Verschueren, P. 2008(B)	2a	RA	52	x	PR/step up DMARD for 2 years	0.01 (1/52)			997	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (1/117)	0.00 (0/119)	3.1 (0.1-76)	7300	
Chronic medium	Joint Committee Report, 1959	1b	RA	41	36	PR vs Aspirin for 2 years	0.01 (1/41)	0.00 (0/36)	2.7 (0.1-68)	9928	
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.00 (0/41)	3.2 (0.1-80)	7300	
Chronic medium	Empire, 1957	1b	RA	49	50	Cortisone vs Aspirin for 3 years	0.00 (0/49)	0.01 (1/50)	0.3 (0.0-8.4)	14782	
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.00 (0/124)			>7900	
Stepdown	Boers, M. 1997	1b	RA	76	79	PR/SSZ/MTX vs SSZ for >1 year	0.01 (1/76)	0.00 (0/79)	3.2 (0.1-79)	2345	
IM	Choy, E.H. 2005	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.01 (1/48)	0.00 (0/43)	2.7 (0.1-69)	3600	
IM	Verstappen, S.M. 2010	1b	IP	133	132	MP IM 3x monthly vs Placebo (\pm DMARD) (follow up 1 year)	0.00 (0/133)	0.01 (1/132)	0.3 (0.0-8.1)	300	
Summary		All studies						Placebo-controlled studies			
		GC+ patients (n)		Mean daily PR equivalent dose (mg)		Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value
Chronic medium		318		8.7		0.00-0.01		4 studies. 247 vs 246		3.0 (0.3-29)	1.0
Chronic high		124		43.3		0.00					
Stepdown		76		6.4		0.01		1 study. 76 vs 79		3.2 (0.1-79)	0.7
IM		181		2.9		0.00-0.01		2 studies. 181 vs 175		0.9 (0.1-9.2)	-0.0

Adverse event: Hypertension										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	Messina, O.D. 1992 (A)	1b	RA	8	x	PR/NSAID for 1 year	0.63 (5/8)			3650
Chronic medium	Messina, O.D. 1992 (B)	1b	RA	8	x	Deflazacort/NSAID for 1 year	0.13 (1/8)			3650
Chronic medium	Joint Committee Report, 1959	1b	RA	41	36	PR vs Aspirin for 2 years	0.28 (23/41)	0.19 (14/36)	2.0 (0.8-5.0)	9928
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.09 (7/40)	0.07 (6/41)	1.2 (0.4-4.1)	7300
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.05 (11/117)	0.08 (18/119)	0.6 (0.3-1.3)	7300
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.04 (2/30)			3266
Chronic medium	Salvarani, C. 2007(A)	1b	PMR	28	x	PR for 0.33 year	0.54 (5/28)			910
Chronic medium	Salvarani, C. 2007(B)	1b	PMR	23	x	PR/Infliximab for 0.33 year	0.00 (0/23)			910
Chronic medium	Ferraccioli, G.1996 (A)	1b	PMR	12	x	PR for 1 year	0.17 (2/12)			3200
Chronic medium	Ferraccioli, G.1996 (B)	1b	PMR	12	x	PR/MTX for 1 year	0.00 (0/12)			1840
Chronic medium	van der Veen, M.J. 1996(A)	1b	PMR/GCA	40	x	PR/Ca for 1 year (follow up 2 years)	0.06 (5/40)			2947
Chronic medium	van der Veen, M.J. 1996(B)	1b	PMR/GCA	40	x	PR/Ca/MTX for 1 year (follow up 2 years)	0.11 (9/40)			2400
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.06 (3/36)			2600
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.10 (5/36)			2600
Chronic medium	Empire, 1957	1b	RA	49	50	Cortisone vs Aspirin for 3 years	0.03 (4/49)	0.00 (0/50)	10 (0.5-191)	14782
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.02 (11/124)			>7900
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.29 (12/21)			5490
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.38 (16/21)			5490
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.21 (3/14)			6947
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.31 (4/13)			3100
Stepdown	Hernandes-Garcia, C. 1994	2b	GCA	11	x	PR/MTX for 2.5 years	0.07 (2/11)			3400
Stepdown	Bootsma, H. 1995(A)	1b	SLE	22	x	PR±CYC/Ca (early treatment) for 3 years	0.06 (4/22)			8052
Stepdown	Bootsma, H. 1995(B)	1b	SLE	24	x	PR±CYC/Ca (conventional treatment) for 3 years	0.01 (1/24)			4515
Stepdown	Wang, H.Y. 2003(A)	2a	SLE	70	x	PR/LEF for 0.5 year	0.20 (7/70)			5894
Stepdown	Wang, H.Y. 2003(B)	2a	SLE	40	x	PR/CYC for 0.5 year	0.05 (1/40)			5894
Stepdown	Boers, M. 1997	1b	RA	76	79	PR/SSZ/MTX vs SSZ for >1 year	0.00 (0/76)	0.00 (0/79)	N/A	2345
Stepdown	Choy, E.H. 2008(A)	1b	RA	115	x	PR/MTX for 0.75 year	0.09 (8/115)			>1135
Stepdown	Choy, E.H. 2008(B)	1b	RA	116	x	PR/MTX/cyclo for 0.75 year	0.20 (17/116)			>1135
Stepdown	de Groot, K. 2009	1b	Vasculitis	149	x	PR/CYC IV or CYC oral for 1.5 years	0.01 (2/149)			7587
Stepdown	Silva, F. 2010	2b	MPA	17	x	PR/MP IV induction/MMF/Cotrimoxazol for 0.5 year (follow up 1.5 y)	0.00 (0/17)			8200
IM	Choy, E.H. 2005	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.04 (4/48)	0.01 (1/43)	3.8 (0.4-36)	3600
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value		
Chronic medium		520	9.6	0.00-0.63		4 studies. 247 vs 246		1.2 (0.8-2.0) 0.8		
Chronic high		124	43.3	0.02						
Stepdown		709	14.1	0.00-0.38		1 study. 76 vs 79		N/A		
IM		48	4.9	0.04		1 study. 48 vs 43		3.8 (0.4-36) 1.2		

Adverse event: Heart rhythm disorder											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Rhodes, J.M. 2007(A)*	1b	UC	59	x	Predocol 40 mg/Mesalazine/AZA for 0.5 year	0.10 (3/59)			4500	
Chronic medium	Caporali, R. 2004(A)‡	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.04 (2/36)			2600	
Chronic medium	Caporali, R. 2004(B)‡	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.00 (0/36)			2600	
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.02 (2/41)	0.5 (0.0-5.7)	7300	
Chronic high	Rhodes, J.M. 2007(B)*	1b	UC	61	x	Predocol 60 mg/Mesalazine/AZA for 0.5 year	0.13 (4/61)			6840	
Chronic high	Ribi, C. 2010*	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.00 (1/124)			>7900	
Stepdown	Rhodes, J.M. 2007(C)*	1b	UC	61	x	PR/Mesalazine/AZA for 0.5 year	0.26 (8/61)			1365	
Stepdown	Wang, H.Y. 2003(A)	2a	SLE	70	x	PR/LEF for 0.5 year	0.11 (4/70)			5894	
Stepdown	Wang, H.Y. 2003(B)	2a	SLE	40	x	PR/CYC for 0.5 year	0.05 (1/40)			5894	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.00 (0/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.15 (2/13)			3100	
IV	Walters, M.T. 1988	1b	RA	17	x	MP IV vs MP IV/GOLD vs MP IV/CYC vs MP IV/GOLD/CYC for 0.5 year	0.12 (1/17)			2625	
IV	Hansen, T.M. 1990‡	1b	RA	50	47	MP IV/Penicillamine or AZA vs Penicillamine or AZA for 0.5 year#	0.60 (15/50)	0.26 (6/47)	2.9 (1.0-8.4)	7875	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value		
Chronic medium		171	15.8	0.00-0.10		1 study, 40 vs 41		0.5 (0.0-5.7)	-0.6		
Chronic high		185	40.4	0.00-0.13							
Stepdown		198	19.9	0.00-0.26							
IV		67	28.8	0.12-0.60		1 study, 50 vs 47		2.9 (1.0-8.4)	2.0		

‡ tachycardia, * atrial fibrillation, # per month 1050 mg IV MP for 6 months

* the AE could be recorded more than one time in one patient

Adverse event: Edema										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	Dasgupta, B. 1998 (A)	1b	PMR	30	x	PR for 1.8 years	0.06 (3/30)			3266
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.00 (0/41)	3.2 (0.1-80)	7300
Chronic medium	Joint Committee Report, 1959	1b	RA	41	36	PR vs Aspirin for 2 years	0.05 (4/41)	0.07 (5/36)	0.7 (0.2-2.7)	9928
Chronic medium	Empire, 1957	1b	RA	49	50	Cortisone vs Aspirin for 3 years	0.01 (2/49)	0.00 (0/50)	5.3 (0.2-114)	14782
Chronic medium	Rhodes, J.M. 2007(A)*	1b	UC	59	x	Predocol 40 mg/Mesalazine/AZA for 0.5 year	0.07 (2/59)			4500
Chronic high	Rhodes, J.M. 2007(B)*	1b	UC	61	x	Predocol 60 mg/Mesalazine/AZA for 0.5 year	0.13 (4/61)			6840
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.21 (3/58)			3605
Stepdown	Rutgeerts, P. 1994	1b	CD	88	x	PR vs Budesonide (low dose) for 0.2 year	0.60 (10/88)			1680
Stepdown	Bar-Meir, S. 1998	1b	CD	101	x	PR 40 mg vs Budesonide (low dose) for 0.16 year	0.57 (9/101)			1295
Stepdown	Herrlinger, K.R. 2006	1b	CD	24	27	PR 60 mg/AZA vs rh IL11/AZA for 0.25 year	0.17 (1/24)	0.00 (0/27)	3.5 (0.1-90)	1890
Stepdown	Rhodes, J.M. 2007(C)*	1b	UC	61	x	PR/Mesalazine/AZA for 0.5 year	0.30 (9/61)			1365
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.07 (1/14)			6947
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.00 (0/13)			3100
IM	Dasgupta, B. 1998 (B)	1b	PMR	30	x	MP IM every 3 weeks for 1.8 years	0.06 (3/30)			1825
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value		
Chronic medium		219	13.3	0.01-0.07		3 studies. 130 vs 127		1.1 (0.3-3.7) 0.2		
Chronic high		61	37.5	0.13						
Stepdown		359	20.7	0.00-0.60		1 study. 24 vs 27		3.5 (0.1-90) 0.8		
IM		30	2.8	0.06						

* the AE could be recorded more than one time in one patient

Adverse event: Renal disturbances										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	van der Veen, M.J. 1996(A)*	1b	PMR/GCA	40	x	PR/Ca for 1 year (follow up 2 years)	0.13 (10/40)			2947
Chronic medium	van der Veen, M.J. 1996(B)*	1b	PMR/GCA	40	x	PR/Ca/MTX for 1 year (follow up 2 years)	0.09 (7/40)			2400
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.01 (2/117)	0.00 (1/119)	2.1 (0.2-23)	7300
Chronic medium	van Gestel, A.M. 1995^	1b	RA	20	20	PR/NSAID/GOLD vs Placebo/NSAID/GOLD for 0.8 years	0.06 (1/20)	0.00 (0/20)	3.2 (0.1-82)	1078
Stepdown	Choy, E.H. 2008 (A)*	1b	RA	115	x	PR/MTX for 0.75 year	0.05 (4/115)			>1135
Stepdown	Choy, E.H. 2008 (B)*	1b	RA	116	x	PR/MTX/cyclo for 0.75 year	0.40 (35/116)			>1135
Stepdown	Boers, M. 1997‡	1b	RA	76	79	PR/SSZ/MTX vs SSZ for >1 year	0.00 (0/76)	0.01 (1/79)	0.3 (0.0-8.5)	2345
Stepdown	Herrlinger, K.R. 2006 #	1b	CD	24	27	PR 60 mg/AZA vs rh IL11/AZA for 0.25 year	0.17 (1/24)	0.00 (0/27)	3.5 (0.1-90)	1890
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value		
Chronic medium		217	7.1	0.01-0.13		2 study. 137 vs 139		3.1 (0.3-30) 1.0		
Stepdown		331	8.9	0.00-0.40		2 studies. 100 vs 106		1.1 (0.1-11) 0.1		

* increased creatinine, ^ renal failure, ‡ proteinuria, # kidney infarction

Adverse event: Osteonecrosis										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic high	Sakamoto, M. 1997	2b	Different	48	x	PR/MP IV for > 0.5 year (follow up 2.6 years)	0.14 (17/48)			5876
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.00 (1/124)			>7900
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.00 (0/58)			3605
Stepdown	Silva, F. 2010	2b	MPA	17	x	PR/MP IV induction/MMF/Cotrimoxazol for 0.5 year (follow up 1.5 y)	0.04 (1/17)			8200
IV	Shipley, M.E. 1988	1b	RA	71	x	1 g MP IV 1x (follow up 0.5 years)	0.09 (1/23)			1250
Summary		All studies								
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year						
Chronic high		172	37.7	0.00-0.14						
Stepdown		75	42.2	0.00-0.04						
IV		71	?	0.09						

Adverse event: Myopathy										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.13 (86/124)			>7900
Stepdown	Bar-Meir, S. 1998	1b	CD	101	x	PR 40 mg vs Budesonide 9 mg for 0.16 year	1.61 (26/101)			1295
Stepdown	Chevalet, P. 2000(A)	1b	GCA	61	x	once MP 240 mg IV/0.7 mg/kg PR/Ca-Vit D for 1 year	0.02 (1/61)			5777
Stepdown	Chevalet, P. 2000(B)	1b	GCA	53	x	0.7 mg/kg PR/Ca-Vit D for 1 year	0.00 (0/53)			5578
Stepdown	Chevalet, P. 2000(C)	1b	GCA	50	x	once MP 240 mg IV/0.5 mg/kg PR/Ca-Vit D for 1 year	0.02 (1/50)			5168
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.05 (2/21)			5490
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.02 (1/21)			5490
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.44 (8/9)			5908
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.50 (12/12)			6469
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.00 (0/14)			6947
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.00 (0/13)			3100
Summary		All studies								
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year						
Chronic high		124	43.3	0.13						
Stepdown		355	12.7	0.00-1.61						

Adverse event: Vertebral fracture											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Ferraccioli, G.1996(A)	1b	PMR	12	x	PR for 1 year	0.08 (1/12)			3200	
Chronic medium	Ferraccioli, G.1996(B)	1b	PMR	12	x	PR/MTX for 1 year	0.00 (0/12)			1840	
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.17 (9/30)			3266	
Chronic medium	Reid, D.M. 2000(A)	1b	Different	96	x	PR/Ca-Vit D for 5.5 years	0.01 (3/96)			30240	
Chronic medium	Reid, D.M. 2000(B)	1b	Different	100	x	PR/Ca-Vit D/Risedronate for 5.5 years	0.02 (9/100)			30240	
Chronic medium	Boutsen, Y. 1997(A)	1b	Different	14	x	PR/Ca/Pamidronate for 1 year	0.00 (0/14)			5726	
Chronic medium	Boutsen, Y. 1997(B)	1b	Different	13	x	PR/CA for 1 year	0.08 (1/13)			4027	
Chronic medium	Guaydier-Souquieres, G. 1996(A)	1b	Different	17	x	PR/Ca/MFP for 2 years	0.06 (2/17)			10600	
Chronic medium	Guaydier-Souquieres, G. 1996(B)	1b	Different	18	x	PR/Ca for 2 years	0.00 (0/18)			14200	
Chronic medium	van Schaardenburg, D. 1995	1b	RA	28	28	PR vs HCQ for 2 years	0.02 (1/28)	0.00 (0/28)	3.1 (0.1-80)	5840	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (1/117)	0.00 (0/119)	3.1 (0.1-76)	7300	
Chronic medium	van Everdingen, A.A. 2002*	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.10 (8/40)	0.05 (4/41)	2.3 (0.6-8.4)	7300	
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.00 (1/124)			>7900	
Stepdown	Spiers, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.17 (3/9)			5908	
Stepdown	Spiers, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.04 (1/12)			6469	
Stepdown	Hernandes-Garcia, C. 1994*	2b	GCA	11	x	PR/MTX for 2.5 years	0.18 (5/11)			3400	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.00 (0/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.00 (0/13)			3100	
Stepdown	Hoffman, G.S. 2002(A)	1b	GCA	47	x	PR/Ca-VitD for 1 year	0.00 (0/47)			5275	
Stepdown	Hoffman, G.S. 2002(B)	1b	GCA	47	x	PR/Ca-Vit D/MTX for 1 year	0.04 (2/47)			5375	
IM	Dasgupta, B. 1998(B)	1b	PMR	30	x	MP IM every 3 weeks for 1.8 years	0.02 (1/30)			1825	
Summary		All studies				Placebo-controlled studies					
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		497	11.5	0.00-0.17		3 studies. 185 vs 188		2.6 (0.8-8.5) 1.6			
Chronic high		124	43.3	0							
Stepdown		153	11.1	0.00-0.18							
IM		30	2.8	0.02							

* the AE could be recorded more than one time in one patient

Adverse event: Non-vertebral fracture											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	van Schaardenburg, D. 1995	1b	RA	28	28	PR vs HCQ for 2 years	0.02 (1/28)	0.02 (1/28)	1.0 (0.1-17)	5840	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (1/117)	0.00 (0/119)	3.1 (0.1-76)	7300	
Chronic medium	Reid, D.M. 2000(A)	1b	Different	96	x	PR/Ca-Vit D for 5.5 years	0.01 (6/96)			30240	
Chronic medium	Reid, D.M. 2000(B)	1b	Different	100	x	PR/Ca-Vit D/Risedronate for 5.5 years	0.01 (8/100)			30240	
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.17 (9/30)			3266	
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.02 (1/36)			2600	
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.04 (2/36)			2600	
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.00 (1/124)			>7900	
Stepdown	Hoffman, G.S. 2002(A)	1b	GCA	47	x	PR/Ca-VitD for 1 year	0.02 (1/47)			5275	
Stepdown	Hoffman, G.S. 2002(B)	1b	GCA	47	x	PR/Ca-Vit D/MTX for 1 year	0.00 (0/47)			5375	
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.10 (4/21)			5490	
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.05 (2/21)			5490	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.00 (0/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.08 (1/13)			3100	
Stepdown	Pagnoux, C. 2008(A)	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/AZA for 2.2 years	0.01 (1/63)			10760	
Stepdown	Pagnoux, C. 2008(B)	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/MTX for 2.2 years	0.02 (3/63)			10760	
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.07 (1/58)			3605	
IM	Dasgupta, B. 1998(B)	1b	PMR	30	x	MP IM every 3 weeks for 1.8 years	0.02 (1/30)			1825	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value		
Chronic medium		443	11.7	0.00-0.17		2 study. 245 vs 247		2.0 (0.2-22)	0.6		
Chronic high		124	43.3	0,00							
Stepdown		347	15.3	0.00-0.10							
IM		30	2.8	0.02							

fracture localisation: 7 pelvis, 1 wrist, 1 tibia, 1 rib, 1 femoral head, 1 elbow

Adverse event: Osteoporosis (numerical)										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	van der Veen, M.J. 1996(A)*	1b	PMR/GCA	40	x	PR/Ca for 1 year (follow up 2 years)	0.03 (2/40)			2947
Chronic medium	van der Veen, M.J. 1996(B)*	1b	PMR/GCA	40	x	PR/Ca/MTX for 1 year (follow up 2 years)	0.01 (1/40)			2400
Chronic medium	Joint Committee Report, 1959*	1b	RA	41	36	PR vs Aspirin for 2 years	0.16 (13/41)	0.03 (2/36)	7.9 (1.6-38)	9928
Chronic high	Ribi, C. 2010#	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.02 (13/124)			>7900
Stepdown	Bootsma, H. 1995(A)	1b	SLE	22	x	PR±CYC/Ca (early treatment) for 3 years	0.00 (0/22)			8052
Stepdown	Bootsma, H. 1995(B)	1b	SLE	24	x	PR±CYC/Ca (conventional treatment) for 3 years	0.00 (0/24)			4515
Stepdown	de Groot, K. 2009	1b	Vasculitis	149	x	PR/CYC IV or CYC oral for 1.5 years	0.01 (2/149)			7587
Stepdown	Mazlumzadeh, M. 2006(A)‡	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.21 (3/14)			6947
Stepdown	Mazlumzadeh, M. 2006(B)‡	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.23 (3/13)			3100
IM	Choy, E.H. 2005‡	1b	RA	48	43	120 mg MP IM monthly/DMARD vs DMARD for 2 years	0.02 (2/48)	0.00 (0/43)	4.7 (0.2-100)	3600
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value	
Chronic medium		121	9.4	0.01-0.16		1 study, 41 vs 36		7.9 (1.6-38)	2.6	
Chronic high		124	43.3	0.02						
Stepdown		222	11.0	0.00-0.23						
IM		48	4.9	0.02		1 study, 48 vs 43		4.7 (0.2-100)	1.0	

* routinely spinal X-ray; ‡ routinely DXA performed; # not routinely DXA performed

Adverse event: Non-specified infections										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	van der Veen, M.J. 1996(A)	1b	PMR/GCA	40	x	PR/Ca for 1 year (follow up 2 years)	0.03 (2/40)			2947
Chronic medium	van der Veen, M.J. 1996(B)	1b	PMR/GCA	40	x	PR/Ca/MTX for 1 year (follow up 2 years)	0.06 (5/40)			2400
Chronic medium	Salvarani, C. 2007(A)	1b	PMR	28	x	PR for 0.33 year	0.00 (0/28)			910
Chronic medium	Salvarani, C. 2007(B)	1b	PMR	23	x	PR/Infliximab for 0.33 year	0.13 (1/23)			910
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (1/117)	0/00 (0/119)	3.1 (0.1-76)	7300
Chronic medium	Joint Committee Report, 1959	1b	RA	41	36	PR vs Aspirin for 2 years	0.05 (4/41)	0.04 (3/36)	1.2 (0.2-5.7)	9928
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.02 (2/41)	0.5 (0.0-5.7)	7300
Chronic medium	Empire, 1957	1b	RA	49	50	Cortisone vs Aspirin for 3 years	0.03 (4/49)	0.02 (3/50)	1.4 (0.3-6.6)	14782
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.19 (8/21)			5490
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.24 (10/21)			5490
Stepdown	Chevalet, P. 2000(A)	1b	GCA	61	x	once MP 240 mg IV/0.7 mg/kg PR/Ca-Vit D for 1 year	0.25 (15/61)			5777
Stepdown	Chevalet, P. 2000(B)	1b	GCA	53	x	0.7 mg/kg PR/Ca-Vit D for 1 year	0.11 (6/53)			5578
Stepdown	Chevalet, P. 2000(C)	1b	GCA	50	x	once MP 240 mg IV/0.5 mg/kg PR/Ca-Vit D for 1 year	0.20 (10/50)			5168
Stepdown	Boers, M. 1997	1b	RA	76	79	PR/SSZ/MTX vs SSZ for >1 year	0.16 (12/76)	0.08 (6/79)	2.3 (0.8-6.4)	2345
Stepdown	Choy, E.H. 2008(A)	1b	RA	115	x	PR/MTX for 0.75 year	0.05 (4/115)			>1135
Stepdown	Choy, E.H. 2008(B)	1b	RA	116	x	PR/MTX/cyclo for 0.75 year	0.02 (2/116)			>1135
Stepdown	de Groot, K. 2009	1b	Vasculitis	149	x	PR/CYC IV or CYC oral for 1.5 years	0.23 (51/149)			7587
Stepdown	Pagnoux, C. 2008(A)	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/AZA for 2.2 years	0.14 (19/63)			10760
Stepdown	Pagnoux, C. 2008(B)	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/MTX for 2.2 years	0.18 (25/63)			10760
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value		
Chronic medium		378	9.6	0.00-0.13		4 studies. 247 vs 246	1.3 (0.5-3.2)	0.5		
Stepdown		788	10.5	0.02-0.25		1 study. 76 vs 79	2.3 (0.8-6.4)	1.6		

Adverse event: Upper respiratory tract infections											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Verschueren, P. 2008(A)	2a	RA	19	x	PR/SSZ/MTX for 2 years	0.03 (1/19)			2603	
Chronic medium	Verschueren, P. 2008(B)	2a	RA	52	x	PR/step up DMARD for 2 years	0.00 (0/52)			997	
Stepdown	Herrlinger, K.R. 2006	1b	CD	24	27	PR 60 mg/AZA vs rh IL11/AZA for 0.25 year	0.33 (2/24)			1890	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.21 (3/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.15 (2/13)			3100	
Stepdown	Wang, H.Y. 2003(A)*	2a	SLE	70	x	PR/LEF for 0.5 year	0.06 (2/70)			5894	
Stepdown	Wang, H.Y. 2003(B)*	2a	SLE	40	x	PR/CYC for 0.5 year	0.05 (1/40)			5894	
IM	Verstappen, S.M. 2010	1b	IP	133	132	MP IM 3x monthly vs Placebo (±DMARD) (follow up 1 year)	0.01 (1/133)	0.00 (0/132)	3.0 (0.1-74)	300	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		71	2.5	0.00-0.03							
Stepdown		161	22.6	0.05-0.33		1 study, 24 vs 27					
IM		133	0.8	0.01		1 study, 133 vs 132			3.0 (0.1-74)	0.7	

Adverse event: Lower respiratory tract infections											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.07 (4/30)			3266	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (0/117)	0.00 (1/119)	0.3 (0.0-8.3)	7300	
Chronic medium	van Everdingen, A.A. 2002*	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.16 (13/40)	0.16 (13/41)	1.0 (0.4-2.6)	7300	
Chronic high	Ritbi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.01 (4/124)			>7900	
Stepdown	Boers, M. 1997	1b	RA	76	79	PR/SSZ/MTX vs SSZ for >1 year	0.01 (1/76)	0.00 (0/79)	3.2 (0.1-79)	2345	
Stepdown	Spiers, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.06 (1/9)			5908	
Stepdown	Spiers, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.00 (0/9)			6469	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.07 (1/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)*	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.15 (2/13)			3100	
Stepdown	Choy, E.H. 2008 (A)	1b	RA	115	x	PR/MTX for 0.75 year	0.57 (49/115)			>1135	
Stepdown	Choy, E.H. 2008 (B)	1b	RA	116	x	PR/MTX/cyclo for 0.75 year	0.63 (55/116)			>1135	
Stepdown	Wang, H.Y. 2003(A)*	2a	SLE	70	x	PR/LEF for 0.5 year	0.03 (1/70)			5894	
Stepdown	Wang, H.Y. 2003(B)*	2a	SLE	40	x	PR/CYC for 0.5 year	0.05 (1/40)			5894	
Stepdown	Silva, F. 2010	2b	MPA	17	x	PR/MP IV induction/MMF/Cotrimoxazol for 0.5 year (follow up 1.5 y)	0.04 (1/17)			8200	
Stepdown	Wanchu, A. 2009	2b	SSc	36	x	PR/ CYC for 0.5 years	0.01 (1/36)			8260	
IM	Dasgupta, B. 1998(B)	1b	PMR	30	x	MP IM every 3 weeks for 1.8 years	0.06 (3/30)			1825	
IM	Verstappen, S.M. 2010	1b	IP	133	132	MP IM 3x monthly vs Placebo (±DMARD) (follow up 1 year)	0.03 (4/133)	0.01 (1/132)	4.1 (0.5-37)	300	
IV	Sharada, B. 1994	1b	SSC	17	18	100 mg IV dexamethasone per month vs placebo for 0.5 year	1.06 (9/17)	0.33 (3/18)	5.6 (1.2-27)	3996	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		287	8.3	0.00-0.16		2 study, 157 vs 160			0.9 (0.4-2.1)	0.2	
Chronic high		124	43.3	0.01							
Stepdown		518	19.5	0.00-0.63		1 study, 76 vs 79			3.2 (0.1-79)	0.7	
IM		163	1.8	0.03-0.06		1 study, 133 vs 132			4.1 (0.5-37)	1.2	
IV		17	21.9	1.06		1 study, 17 vs 18			5.6 (1.2-27)	2.2	

* the AE could be recorded more than one time in one patient

Adverse event: Skin infections											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	van Everdingen, A.A. 2002*	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.00 (0/40)	0.06 (5/41)	0.1 (0.0-1.5)	7300	
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.06 (1/9)			5908	
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.04 (1/12)			6469	
Stepdown	Chevalet, P. 2000(A)	1b	GCA	61	x	once MP 240 mg IV/0.7 mg/kg PR/Ca-Vit D for 1 year	0.02 (1/61)			5777	
Stepdown	Chevalet, P. 2000(B)	1b	GCA	53	x	0.7 mg/kg PR/Ca-Vit D for 1 year	0.00 (0/53)			5578	
Stepdown	Chevalet, P. 2000(C)	1b	GCA	50	x	once MP 240 mg IV/0.5 mg/kg PR/Ca-Vit D for 1 year	0.08 (4/50)			5168	
IV	Sharada, B. 1994	1b	SSC	17	18	100 mg IV dexamethasone per month vs placebo for 0.5 year	0.24 (2/17)	0.22 (2/18)	1.1 (0.1-8.6)	3996	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		40	10	0,00		1 study. 40 vs 41	0.1 (0.0-1.5)	-1.7			
Stepdown		185	12.4	0.00-0.08							
IV		17	21.9	0.24		1 study. 17 vs 18	1.1 (0.1-8.6)	0.1			

* the AE could be recorded more than one time in one patient

Adverse event: Urinary tract infections											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.02 (1/30)			3266	
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.12 (6/36)			2600	
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.14 (7/36)			2600	
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.04 (3/40)	0.02 (2/41)	1.6 (0.3-10)	7300	
Chronic medium	Tait, T.J. 1994	3	RA	15	x	PR/NSAID±DMARDs for 0.9 year	0.07 (1/15)			1680	
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.00 (3/124)			>7900	
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.06 (1/9)			5908	
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.04 (1/12)			6469	
Stepdown	Mazlumzadeh, M. 2006(A)*	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.21 (3/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)*	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.15 (2/13)			3100	
Stepdown	Wang, H.Y. 2003(A)* *	2a	SLE	70	x	PR/LEF for 0.5 year	0.00 (0/70)			5894	
Stepdown	Wang, H.Y. 2003(B)* *	2a	SLE	40	x	PR/CYC for 0.5 year	0.05 (1/40)			5894	
IM	Choy, E.H. 1993	1b	RA	21	x	120 mg MP IM/GOLD for 0.2 year	0.48 (2/21)			450	
IM	Corkill, M.M. 1990	1b	RA	35	24	MP 120 mg 3x/NSAID/GOLD vs Placebo/NSAID/GOLD for 0.5 year	0.06 (1/35)	0.00 (0/24)	2.1 (0.1-55)	450	
IM	Verstappen, S.M. 2010	1b	IP	133	132	MP IM 3x monthly vs Placebo (±DMARD) (follow up 1 year)	0.01 (1/133)	0.00 (0/132)	3.0 (0.1-74)	300	
Summary		All studies					Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		157	9.7	0.02-0.14		1 study. 40 vs 41	1.6 (0.3-10)	0.5			
Chronic high		124	43.3	0,00							
Stepdown		158	18.2	0.00-0.21							
IM		189	3.2	0.01-0.48		2 studies. 168 vs 156	2.5 (0.3-25)	0.8			

* pyelonephritis

* the AE could be recorded more than one time in one patient

Adverse event: Dyspepsia											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.06 (3/30)			3266	
Chronic medium	Salvarani, C. 2007(A)	1b	PMR	28	x	PR for 0.33 year	0.11 (1/28)			910	
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.04 (2/36)			2600	
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.12 (6/36)			2600	
Chronic medium	Tait, T.J. 1994	3	RA	15	x	PR/NSAID±DMARDs for 0.9 year	0.07 (1/15)			1680	
Chronic medium	Joint Committee Report, 1959*	1b	RA	41	36	PR vs Aspirin for 2 years	0.29 (24/41)	0.76 (55/36)	N/A	9928	
Chronic medium	Empire, 1957	1b	RA	49	50	Cortisone vs Aspirin for 3 years	0.01 (1/49)	0.02 (3/50)	0.3 (0.0-3.3)	14782	
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.09 (7/40)	0.04 (3/41)	2.7 (0.6-11)	7300	
Chronic medium	Reid, D.M. 2000(A)	1b	Different	96	x	PR/Ca-Vit D for 5.5 years	0.02 (9/96)			30240	
Chronic medium	Reid, D.M. 2000(B)	1b	Different	100	x	PR/Ca-Vit D/Risedronate for 5.5 years	0.02 (13/100)			30240	
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.33 (6/9)			5908	
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.42 (10/12)			6469	
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.02 (1/21)			5490	
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.07 (3/21)			5490	
Stepdown	Bar-Meir, S. 1998	1b	CD	101	x	PR 40 mg vs Budesonide (low dose) for 0.16 year	1.86 (30/101)			1295	
IM	Dasgupta, B. 1998(B)	1b	PMR	30	x	MP IM every 3 weeks for 1.8 years	0.09 (5/30)			1825	
Summary		All studies				Placebo-controlled studies					
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year	GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value			
Chronic medium		471	11.3	0.01-0.29	2 studies. 89 vs 91		1.5 (0.4-5.0)	0.6			
Stepdown		164	10.8	0.02-1.86							
IM		30	2.8	0.09							

* the AE could be recorded more than one time in one patient

Adverse event: Gastroduodenal ulcer										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.02 (2/41)	0.5 (0.0-5.7)	7300
Chronic medium	Joint Committee Report, 1959	1b	RA	41	36	PR vs Aspirin for 2 years	0.04 (3/41)	0.00 (0/36)	6.6 (0.3-133)	9928
Chronic medium	Empire, 1957	1b	RA	49	50	Cortisone vs Aspirin for 3 years	0.01 (1/49)	0.00(0/50)	3.1 (0.1-79)	14782
Chronic medium	Verschueren, P. 2008(A)	2a	RA	19	x	PR/SSZ/MTX for 2 years	0.00 (0/19)			2603
Chronic medium	Verschueren, P. 2008(B)	2a	RA	52	x	PR/step up DMARD for 2 years	0.01 (1/52)			997
Chronic medium	Reid, D.M. 2000(A)	1b	Different	96	x	PR/Ca-Vit D for 5.5 years	0.00 (1/96)			30240
Chronic medium	Reid, D.M. 2000(B)	1b	Different	100	x	PR/Ca-Vit D/Risedronate for 5.5 years	0.00 (0/100)			30240
Chronic medium	Guaydier-Souquieres G, 1996(A)	1b	Different	17	x	PR/Ca/MFP for 2 years	0.00 (0/17)			10600
Chronic medium	Guaydier-Souquieres G, 1996(B)	1b	Different	18	x	PR/Ca for 2 years	0.00 (0/18)			14200
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.00 (0/14)			6947
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.00 (0/13)			3100
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)		Odds ratio (95% CI)	Z-Value	
Chronic medium		432	11.8	0.00-0.04		3 studies. 130 vs 127		1.7 (0.3-8.8)	0.7	
Stepdown		27	13.8	0.00						

Adverse event: Cataract											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.02 (1/30)			3266	
Chronic medium	Salvarani, C. 2007(A)	1b	PMR	28	x	PR for 0.33 year	0.22 (2/28)			910	
Chronic medium	Ferraccioli, G.1996(A)	1b	PMR	12	x	PR for 1 year	0.00 (0/12)			3200	
Chronic medium	Ferraccioli, G.1996(B)	1b	PMR	12	x	PR/MTX for 1 year	0.33 (4/12)			1840	
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.04 (2/36)			2600	
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.00 (0/36)			2600	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (1/117)	0.00 (0/119)	3.1 (0.1-76)	7300	
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.01 (1/41)	1.0 (0.1-17)	7300	
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.02 (12/124)			>7900	
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.05 (2/21)			5490	
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.02 (1/21)			5490	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.07 (1/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.00 (0/13)			3100	
Stepdown	de Groot, K. 2009	1b	Vasculitis	149	x	PR/CYC IV or CYC oral for 1.5 years	0.01 (3/149)			7587	
Summary		All studies				Placebo-controlled studies					
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		311	9.3	0.00-0.33		2 study. 157 vs 160		2.1 (0.2-23) 0.6			
Chronic high		124	43.3	0.02							
IM		218	11.3	0.00-0.07							

Adverse event: Glaucoma											
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg	
				GC+	GC-		GC+	GC-			
Chronic medium	Dasgupta, B. 1998(A)	1b	PMR	30	x	PR for 1.8 years	0.04 (2/30)			3266	
Chronic medium	Bakker, M.F. 2012	1b	RA	117	119	PR 10mg/MTX/Bisphos./CaVit D vs MTX /Bisphos./CaVit D for 2 years	0.00 (0/117)	0.00 (1/119)	0.3 (0.0-8.3)	7300	
Chronic medium	van Everdingen, A.A. 2002	1b	RA	40	41	PR/NSAID vs Placebo/NSAID for 2 years	0.01 (1/40)	0.00 (0/41)	3.2 (0.1-80)	7300	
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.01 (4/124)			>7900	
Stepdown	Mazlumzadeh, M. 2006(A)	1b	GCA	14	x	PR/3 g MP IV/Ca-Vit D for 1 year	0.07 (1/14)			6947	
Stepdown	Mazlumzadeh, M. 2006(B)	1b	GCA	13	x	PR/Placebo/Ca-Vit D for 1 year	0.00 (0/13)			3100	
IM	Dasgupta, B. 1998 (B)	1b	PMR	30	x	MP IM every 3 weeks for 1.8 years	0.02 (1/30)			1825	
IV	Williams, I.A. 1982	1b	RA	10	10	once 1 g MP IV vs Placebo IV (follow up 0.1 year)	1.00 (1/10)	0.00 (0/10)	3.3 (0.1-92)	1250	
Summary		All studies				Placebo-controlled studies					
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value			
Chronic medium		187	8.3	0.00-0.04		2 study. 157 vs 160		1.0 (0.1-16) 0.01			
Chronic high		124	43.3	0,00							
Stepdown		27	13.8	0.00-0.07							
IM		30	2.8	0.02							
IV		10	34.2	1,00		1 study. 10 vs 10		3.3 (0.1-92) 0.7			

Adverse event: Mood disturbance										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	Joint Committee Report, 1959* ^x	1b	RA	41	36	PR vs Aspirin for 2 years	0.04 (3/41)	0.01 (1/36)	2.8 (0.3-28)	9928
Chronic medium	Rhodes, J.M. 2007(A)*	1b	UC	59	x	Predocol 40 mg/Mesalazine/AZA for 0.5 year	0.34 (10/59)			4500
Chronic high	Rhodes, J.M. 2007(B)*	1b	UC	61	x	Predocol 60 mg/Mesalazine/AZA for 0.5 year	0.30 (9/61)			6840
Stepdown	Rhodes, J.M. 2007(C)*	1b	UC	61	x	PR/Mesalazine/AZA for 0.5 year	0.72 (22/61)			1365
Stepdown	Campieri, M. 1997	1b	CD	58	x	PR/AZA/Metronidazole vs low dose budesonide for 0.25 year	0.48 (7/58)			3605
Stepdown	Rutgeerts, P. 1994	1b	CD	88	x	PR vs Budesonide (low dose) for 0.2 year	0.34 (6/88)			1680
Stepdown	Spiera, R.F. 2001(A)	1b	GCA	9	x	PR/Ca-Vit D for 2 years	0.50 (9/9)			5908
Stepdown	Spiera, R.F. 2001(B)	1b	GCA	12	x	PR/MTX/Ca-Vit D for 2 years	0.50 (12/12)			6469
IM	Verstappen, S.M. 2010	1b	IP	133	132	MP IM 3x monthly vs Placebo (±DMARD) (follow up 1 year)	0.01 (1/133)	0.00 (0/132)	3.0 (0.1-74)	300
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value		
Chronic medium		100	19.1	0.04-0.34		1 study, 41 vs 36	2.8 (0.3-28)	0.9		
Chronic high		61	37.5	0.3						
Stepdown		228	18.3	0.34-0.72						
IM		133	0.8	0.01		1 study, 133 vs 132	3.0 (0.1-74)	0.7		

* euphoria

^x the AE could be recorded more than one time in one patient

Adverse event: Psychological or psychiatric disorders										
GC dose and pattern	Study	Design	Disease	Patients (n)		Intervention	Events/patient year		Odds ratio (95% CI)	Cumulative dose in mg
				GC+	GC-		GC+	GC-		
Chronic medium	Caporali, R. 2004(A)	1b	PMR	36	x	PR for 0.5 year (follow up 1.4 years)	0.10 (5/36)			2600
Chronic medium	Caporali, R. 2004(B)	1b	PMR	36	x	PR/MTX for 0.5 year (follow up 1.4 years)	0.06 (3/36)			2600
Chronic medium	Verschueren, P. 2008(B)	2a	RA	52	x	PR/step up DMARD for 2 years	0.01 (1/52)			997
Chronic medium	Joint Committee Report, 1959*	1b	RA	41	36	PR vs Aspirin for 2 years	0.02 (2/41)	0.00 (0/36)	4.6 (0.2-99)	9928
Chronic high	Ribi, C. 2010	1b	MPA/PAN	124	x	PR/MP IV with AZA or CYC IV for 0.5 years (follow up 5.2 years)	0.00 (2/124)			>7900
Stepdown	Chevalet, P. 2000(A)	1b	GCA	61	x	once MP 240 mg IV/0.7 mg/kg PR/Ca-Vit D for 1 year	0.10 (6/61)			5777
Stepdown	Chevalet, P. 2000(B)	1b	GCA	53	x	0.7 mg/kg PR/Ca-Vit D for 1 year	0.04 (2/53)			5578
Stepdown	Chevalet, P. 2000(C)	1b	GCA	50	x	once MP 240 mg IV/0.5 mg/kg PR/Ca-Vit D for 1 year	0.10 (5/50)			5168
Stepdown	Jover, J.A. 2001(A)	1b	GCA	21	x	PR/Ca-Vit D for 2 years	0.24 (10/21)			5490
Stepdown	Jover, J.A. 2001(B)	1b	GCA	21	x	PR/MTX/Ca-Vit D for 2 years	0.19 (8/21)			5490
Stepdown	Pagnoux, C. 2008(A)	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/AZA for 2.2 years	0.01 (1/63)			10760
Stepdown	Pagnoux, C. 2008(B)	1b	Vasculitis	63	x	induction MP/CYC IV. then PR/MTX for 2.2 years	0.01 (2/63)			10760
Stepdown	Bootsma, H. 1995(A)	1b	SLE	22	x	PR±CYC/Ca (early treatment) for 3 years	0.00 (0/22)			8052
Stepdown	Bootsma, H. 1995(B)	1b	SLE	24	x	PR±CYC/Ca (conventional treatment) for 3 years	0.00 (0/24)			4515
Summary		All studies				Placebo-controlled studies				
		GC+ patients (n)	Mean daily PR equivalent dose (mg)	Range of AE-rate per patient year		GC+ patients vs GC- patients (n)	Odds ratio (95% CI)	Z-Value		
Chronic medium		165	10.9	0.01-0.10		1 study, 41 vs 36	4.6 (0.2-99)	1,0		
Chronic high		124	43.3	0,00						
Stepdown		378	11.2	0.00-0.24						

* psychosis

Adverse event: Osteoporosis BMD total (means)												
Study	Design	Disease	GC dose and pattern	Patients (n)		Intervention	Cumulative dose in mg	Timepoint assessment	Change in BMD (g/cm ²) with baseline (%)		Value	
				GC+	GC-				GC +	GC-	Baseline	End
Nordborg, E. 1999(A)	1b	GCA	Chronic medium	14	x	PR/Clodronate/Ca for 1 year	3700	1 year	minus 1.0	x	1.06	1.07
Nordborg, E. 1999(B)	1b	GCA	Chronic medium	13	x	PR/Ca for 1 year	3900	1 year	minus 2.0	x	1.02	1.04
Frediani, B. 2003(A)	1b	RA	Chronic medium	31	x	MP oral/MTX/SSZ for 1 year	3060	1 year	minus 7.8	x	1.06	0.98
Mok, C.C. 2008	2b	SLE	Stepdown	29	x	PR/Ca-Vit D for 0.5 year	>7900	0.5 year	minus 0.7	x	1.06	1.05
Frediani, B. 2003(B)	1b	RA	IV	31	x	MP IV/MTX/SSZ for 1 year	18750	1 year	minus 7.1	x	1.05	0.98
Summary		All studies										
Range of change in BMD compared with baseline (%)		GC+ patients (n)		Mean daily PR equivalent dose (mg)								
Chronic medium	minus 7.8 - minus 1.0	58		9.7								
Stepdown	minus 0.7	29		43.3								
IV	minus 7.1	31		51.4								

Adverse event: Osteoporosis BMD lumbar spine (means)												
Study	Design	Disease	GC dose and pattern	Patients (n)		Intervention	Cumulative dose in mg	Timepoint assessment	Change in BMD (g/cm ²) with baseline (%)		Value	
				GC+	GC-				GC +	GC-	Baseline	End
Guaydier-Souquieres, G. 1996(A)	1b	Different	Chronic medium	17	x	PR/Ca/MFP for 2 years	10600	2 years	11.0	x	0.91	0.99
Guaydier-Souquieres, G. 1996(B)	1b	Different	Chronic medium	18	x	PR/Ca for 2 years	14200	2 years	1.2	x	0.93	0.93
Reid, D.M. 2000(A)	1b	Different	Chronic medium	96	x	PR/Ca-Vit D for 5.5 years	30240	1 year	0.4	x	x	x
Reid, D.M. 2000(B)	1b	Different	Chronic medium	100	x	PR/Ca-Vit D/Risedronate for 5.5 years	30240	1 year	2.9	x	x	x
Bernstein, C.N. 1996(A)	1b	IBD	Chronic medium	9	x	PR/Ca-Vit D	>5071	1 year	3.3	x	x	x
Bernstein, C.N. 1996(B)	1b	IBD	Chronic medium	8	x	PR	>4514	1 year	0.6	x	x	x
Boutsen, Y. 1997(A)	1b	Different	Chronic medium	14	x	PR/Ca/Pamidronate for 1 year	5726	1 year	3.6	x	0.86	x
Boutsen, Y. 1997(B)	1b	Different	Chronic medium	13	x	PR/CA for 1 year	4027	1 year	minus 5.3	x	0.96	x
Frediani, B. 2003(A)	1b	RA	Chronic medium	31	x	MP oral/MTX/SSZ for 1 year	3060	1 year	minus 9.0	x	1.00	0.9
Verhoeven, A.C. 2001(A)	1b	RA	Stepdown	76	79	PR/SSZ/MTX for 1 year	2345	1 year	minus 1.4	minus 0.4	1.13	x
Verhoeven, A.C. 2001(B)	1b	RA	Stepdown	76	79	SSZ for 1 year	0	1 year	minus 1.4	minus 0.4	1.11	x
Mok, C.C. 2008	2b	SLE	Stepdown	29	x	PR/Ca-Vit D for 0.5 year	>7900	0.5 year	minus 0.5	x	0.96	0.95
Choy, E.H. 2005(A)*	1b	RA	IM	48	43	DMARD/120 mg MP monthly for 2 years	3600	0.5 year	minus 18.0*	minus 1*	minus 0.39*	minus 0.46*
Choy, E.H. 2005(B)*	1b	RA	IM	48	43	DMARD for 2 years	0	0.5 year	minus 18.0*	minus 1*	minus 0.60*	minus 0.61*
Frediani, B. 2003(B)	1b	RA	IV	31	x	MP IV/MTX/SSZ for 1 year	18750	1 year	minus 5.2	x	1.00	x
Summary		All studies										
Range of change in BMD compared with baseline (%)		GC+ patients (n)		Mean daily PR equivalent dose (mg)								
Chronic medium	minus 9.0 - 11.0	306		13.9								
Stepdown	minus 1.4 - minus 0.5	105		24.9								
IM	minus 18.0	48		4.9								
IV	minus 5.2	31		51.4								

* T-score instead of BMD

Adverse event: Osteoporosis BMD femoral trochanter (means)													
Study	Design	Disease	GC dose and pattern	Patients (n)		Intervention	Cumulative dose in mg	Timepoint assessment	Change in BMD (g/cm ²) with baseline (%)		Value		
				GC+	GC-				GC +	GC-	Baseline	End	
Reid. D.M. 2000(A)	1b	Different	Chronic medium	96	x	PR/Ca-Vit D for 5.5 years	30240	1 year	1.0	x	x	x	
Reid. D.M. 2000(B)	1b	Different	Chronic medium	100	x	PR/Ca-Vit D/Risedronate for 5.5 years	30240	1 year	2.4	x	x	x	
Boutsen. Y. 1997(A)	1b	Different	Chronic medium	14	x	PR/Ca/Pamidronate for 1 year	5726	1 year	3.3	x	x	x	
Boutsen. Y. 1997(B)	1b	Different	Chronic medium	13	x	PR/CA for 1 year	4027	1 year	minus 3.1	x	x	x	
Summary		All studies											
Range of change in BMD compared with baseline (%)		GC+ patients (n)		Mean daily PR equivalent dose (mg)									
Chronic medium		minus 3.1 - 3.3		223		14.2							

Adverse event: Osteoporosis BMD femoral neck (means)													
Study	Design	Disease	GC dose and pattern	Patients (n)		Intervention	Cumulative dose in mg	Timepoint assessment	Change in BMD (g/cm ²) with baseline (%)		Value		
				GC+	GC-				GC +	GC-	Baseline	End	
Reid. D.M. 2000(A)	1b	Different	Chronic medium	96	x	PR/Ca-Vit D for 5.5 years	30240	1 year	minus 0.3	x	x	x	
Reid. D.M. 2000(B)	1b	Different	Chronic medium	100	x	PR/Ca-Vit D/Risedronate for 5.5 years	30240	1 year	1.8	x	x	x	
Boutsen. Y. 1997(A)	1b	Different	Chronic medium	14	x	PR/Ca/Pamidronate for 1 year	5726	1 year	2.2	x	0.72	x	
Boutsen. Y. 1997(B)	1b	Different	Chronic medium	13	x	PR/CA for 1 year	4027	1 year	minus 5.3	x	0.71	x	
Frediani. B. 2003(A)	1b	RA	Chronic medium	31	x	MP oral/MTX/SSZ for 1 year	3060	1 year	minus 10.0	x	0.87	0.78	
Verhoeven. A.C. 2001(A)	1b	RA	Stepdown	76	79	PR/SSZ/MTX for 1 year	2345	1 year	minus 1.4	minus 1.3	0.93	x	
Verhoeven. A.C. 2001(B)	1b	RA	Stepdown	76	79	SSZ for 1 year	0	1 year	minus 1.4	minus 1.3	0.92	x	
Frediani. B. 2003(B)	1b	RA	IV	31	x	MP IV/MTX/SSZ for 1 year	18750	1 year	minus 5.2	x	0.87	0.83	
Summary		All studies											
Range of change in BMD compared with baseline (%)		GC+ patients (n)		Mean daily PR equivalent dose (mg)									
Chronic medium		minus 10.0 - 2.2		254		13.0							
Stepdown		minus 1.4		76		6.4							
IV		minus 5.2		31		51.4							

Adverse event: Osteoporosis BMD total hip (means)													
Study	Design	Disease	GC dose and pattern	Patients (n)		Intervention	Cumulative dose in mg	Timepoint assessment	Change in BMD with baseline (%)		Value		
				GC+	GC-				GC +	GC-	Baseline	End	
Bernstein, C.N. 1996(A)	1b	IBD	Chronic medium	9	x	PR/Ca-Vit D	>5071	1 year	3.3	x	x	x	
Bernstein, C.N. 1996(B)	1b	IBD	Chronic medium	8	x	PR	>4514	1 year	0.6	x	x	x	
van Schaardenburg, D. 1995	1b	RA	Chronic medium	28	28	PR vs HCQ for 2 years	5840	2 years	minus 6.8	minus 4.8	x	x	
Boutsen, Y. 1997(A)	1b	Different	Chronic medium	14	x	PR/Ca/Pamidronate for 1 year	5726	1 year	1.9	x	x	x	
Boutsen, Y. 1997(B)	1b	Different	Chronic medium	13	x	PR/CA for 1 year	4027	1 year	minus 3.4	x	x	x	
Mok, C.C. 2008	2b	SLE	Stepdown	29	x	PR/Ca-Vit D for 0.5 year	>7900	0.5 year	minus 1.7	x	0.85	0.83	
Choy, E.H. 2005(A)*	1b	RA	IM	48	43	DMARD/120 mg MP monthly for 2 years	3600	0.5 year	minus 15.0*	minus 6*	minus 0.84*	minus 0.97*	
Choy, E.H. 2005(B)*	1b	RA	IM	48	43	DMARD for 2 years	0	0.5 year	minus 15.0*	minus 6*	minus 1.35*	minus 1.44*	
Summary		All studies											
Range of change in BMD compared with baseline (%)		GC+ patients (n)		Mean daily PR equivalent dose (mg)									
Chronic medium		minus 6.8 - 3.3		72		12.2							
Stepdown		minus 1.7		29		43.3							
IM		minus 15.0*		48		4.9							

*T-score instead of BMD

Adverse event: Weight gain (means)									
Study	Design	Disease	Patients (n)		GC dose pattern	Intervention	Cumulative dose in mg	GC+ (mean)	GC- (mean)
			GC+	GC-					
Frediani, B. 2003(A)	1b	RA	31	x	Chronic medium	MP oral/MTX/SSZ for 1 year	3060	1.8 kg	?
Bakker, M.F. 2012	1b	RA	117	119	Chronic medium	PR/MTX/Bisphos./Ca-Vit D vs MTX/Bisphos./Ca-Vit D for 2 years	7300	2.9kg	1.3kg
van Everdingen, A.A. 2002	1b	RA	40	41	Chronic medium	PR/NSAID vs Placebo/NSAID for 2 years	7300	1 kg	?
Boers, M. 1997*	1b	RA	76	79	Stepdown	PR/SSZ/MTX vs SSZ for 1 year	2345	3 kg	1.5 kg
Mok, C.C. 2008	2b	SLE	29	x	Stepdown	PR/Ca-Vit D for 0.5 year	2700	2.5 kg	?
Frediani, B. 2003(B)	1b	RA	31	x	IV	MP IV/MTX/SSZ for 1 year	18750	1.2 kg	?
Summary		All studies							
Range of change in BMD compared with baseline (%)		GC+ patients (n)		Mean daily PR equivalent dose (mg)					
Chronic medium		188		9.5					
Stepdown		105		10.6					
IV		31		51.4					