

Preferences for diagnostic pathways and treatment choice in systemic lupus erythematosus: a patient-based discrete choice experiment

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Supplementary Material - Experimental design simulation

Treatments - Test Design Report

CBC Design Test

One-way Frequency Balance

Attribute	Level	Frequency	Label
1	1	1201	-80
1	2	1200	-60
1	3	1199	-40
2	1	900	0 mg/die
2	2	900	2.5 mg/die
2	3	900	5 mg/die
2	4	900	7.5 mg/die
3	1	900	0.5%
3	2	900	1%
3	3	900	2%
3	4	900	5%
4	1	900	2.5%
4	2	900	5%
4	3	900	10%
4	4	900	20%
5	1	1200	oral
5	2	1200	subcutaneous
5	3	1200	intravenous
6	1	1200	12 weeks
6	2	1200	16 weeks
6	3	1200	24 weeks
7	1	1199	30
7	2	1200	40
7	3	1201	50

Two-Way Frequency Balance

Att/Level	1/1	1/2	1/3	2/1	2/2	2/3	2/4	3/1	3/2	3/3	3/4	4/1	4/2	4/3	4/4	5/1	5/2	5/3	6/1	6/2	6/3	7/1	7/2	7/3
1/1	1201																							
1/2	0	1200																						
1/3	0	0	1199																					
2/1	300	300	300	900																				
2/2	300	301	299	0	900																			
2/3	300	299	301	0	0	900																		
2/4	301	300	299	0	0	0	900																	
3/1	301	300	299	225	223	226	226	900																
3/2	301	299	300	223	227	225	225	0	900															
3/3	299	300	301	225	225	226	224	0	0	900														
3/4	300	301	299	227	225	223	225	0	0	0	900													
4/1	299	300	301	224	225	225	226	225	227	224	224	900												
4/2	302	300	298	226	225	226	223	225	224	225	226	0	900											
4/3	300	301	299	225	225	224	226	224	225	225	226	0	0	900										
4/4	300	299	301	225	225	225	225	226	224	226	224	0	0	0	900									
5/1	401	399	400	301	301	299	299	304	300	299	297	300	300	300	300	1200								
5/2	399	400	401	300	300	300	300	297	300	302	301	300	300	301	299	0	1200							
5/3	401	401	398	299	299	301	301	299	300	299	302	300	300	299	301	0	0	1200						
6/1	401	399	400	301	301	298	300	302	299	300	299	300	300	298	302	400	400	400	1200					
6/2	400	400	400	299	299	302	300	297	303	300	300	300	300	301	299	401	399	400	0	1200				
6/3	400	401	399	300	300	300	300	301	298	300	301	300	300	301	299	399	401	400	0	0	1200			
7/1	400	400	399	300	300	298	301	301	299	298	301	299	300	301	299	400	400	399	400	399	400	1199		
7/2	401	401	398	300	300	301	299	300	300	300	300	302	299	300	299	400	398	402	399	400	401	0	1200	
7/3	400	399	402	300	300	301	300	299	301	302	299	299	301	299	302	400	402	399	401	401	399	0	0	1201

This counting test reports how balanced the design is in terms of frequencies.

Logit Efficiencies

Using main effects only

Respondent Count: 300

Attribute	Level	Std. Error	Label
1	1	0,04036	-80
1	2	0,04084	-60
1	3	0,04085	-40
2	1	0,05179	0 mg/die
2	2	0,05162	2.5 mg/die
2	3	0,05118	5 mg/die
2	4	0,05153	7.5 mg/die
3	1	0,05136	0.5%
3	2	0,05121	1%
3	3	0,05129	2%
3	4	0,05135	5%
4	1	0,05149	2.5%
4	2	0,05155	5%
4	3	0,05149	10%
4	4	0,05170	20%
5	1	0,04087	oral
5	2	0,04091	subcutaneous
5	3	0,04091	intravenous
6	1	0,04063	12 weeks
6	2	0,04120	16 weeks
6	3	0,04009	24 weeks
7	1	0,04073	30
7	2	0,04060	40
7	3	0,04023	50

A general guideline is to achieve standard errors of 0.05 or smaller for main effect utilities and 0.10 or smaller for interaction effects or alternative-specific effects.

Care Pathway - Test Design Report

CBC Design Test

One-way Frequency Balance

Attribute	Level	Frequency	Label
1	1	1201	1 year
1	2	1200	6 months
1	3	1199	4 weeks
2	1	1200	rheumatologist
2	2	1200	immunologist
2	3	1200	team
3	1	1199	1st 1 month, 2nd 2 months
3	2	1201	1st 45 days, 2nd 3 months
3	3	1200	1st at month 3, then at month 6
4	1	1201	none
4	2	1200	psychologist
4	3	1199	nurse-physiotherapist
5	1	1200	territorial
5	2	1200	spoke
5	3	1200	hub
6	1	1200	1/2 hour
6	2	1200	1 hour
6	3	1200	2 hours
7	1	1200	6 weeks
7	2	1200	4 weeks
7	3	1200	2 weeks

Two-Way Frequency Balance

Att/Level	1/1	1/2	1/3	2/1	2/2	2/3	3/1	3/2	3/3	4/1	4/2	4/3	5/1	5/2	5/3	6/1	6/2	6/3	7/1	7/2	7/3
1/1	1201																				
1/2	0	1200																			
1/3	0	0	1199																		
2/1	401	400	399	1200																	
2/2	399	400	401	0	1200																
2/3	401	400	399	0	0	1200															
3/1	401	399	399	399	400	400	1199														
3/2	403	399	399	402	400	399	0	1201													
3/3	397	402	401	399	400	401	0	0	1200												
4/1	401	401	399	401	401	399	400	400	401	1201											
4/2	399	399	402	399	400	401	400	399	401	0	1200										
4/3	401	400	398	400	399	400	399	402	398	0	0	1199									
5/1	400	401	399	399	400	401	399	400	401	400	400	400	1200								
5/2	401	399	400	400	399	401	401	400	399	400	400	400	0	1200							
5/3	400	400	400	401	401	398	399	401	400	401	400	399	0	0	1200						
6/1	400	400	400	400	400	400	401	401	398	401	398	401	400	401	399	1200					
6/2	400	400	400	401	400	399	400	399	401	400	401	399	401	400	399	0	1200				
6/3	401	400	399	399	400	401	398	401	401	400	401	399	399	399	402	0	0	1200			
7/1	400	399	401	400	401	399	400	401	399	400	400	400	399	398	403	399	399	402	1200		
7/2	401	400	399	400	399	401	399	400	401	401	400	399	401	401	398	400	400	400	0	1200	
7/3	400	401	399	400	400	400	400	400	400	400	400	400	400	401	399	401	401	398	0	0	1200

This counting test reports how balanced the design is in terms of frequencies.

Logit Efficiencies

Using main effects only

Respondent Count: 300

Attribute	Level	Std. Error	Label
1	1	0,04143	1 year
1	2	0,04101	6 months
1	3	0,04131	4 weeks
2	1	0,04105	rheumatologist
2	2	0,04078	immunologist
2	3	0,04055	team
3	1	0,04095	1st 1 month, 2nd 2 months
3	2	0,04093	1st 45 days, 2nd 3 months
3	3	0,04106	1st at month 3, then at month 6
4	1	0,04128	none
4	2	0,04121	psychologist
4	3	0,04104	nurse-physiotherapist
5	1	0,04105	territorial
5	2	0,04098	spoke
5	3	0,04084	hub
6	1	0,04105	1/2 hour
6	2	0,04121	1 hour
6	3	0,04101	2 hours
7	1	0,04091	6 weeks
7	2	0,04113	4 weeks
7	3	0,04098	2 weeks

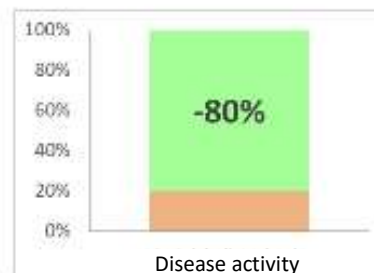
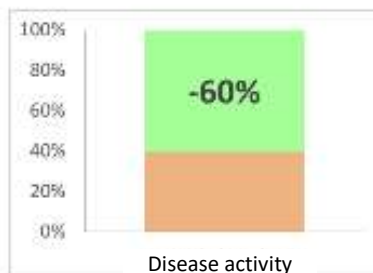
A general guideline is to achieve standard errors of 0.05 or smaller for main effect utilities and 0.10 or smaller for interaction effects or alternative-specific effects.

Figure S1 - Example of a choice task

Which of these two treatments would you prefer to receive?

(2 of 7)

Disease activity after 6 months from baseline

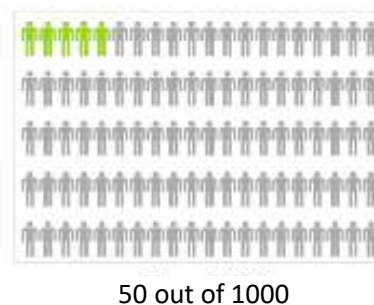
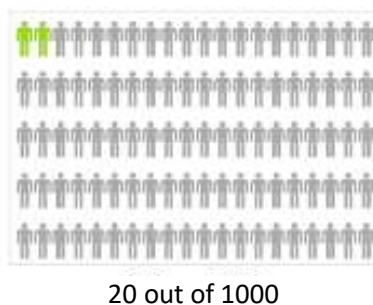


Cortisone dose after 6 months

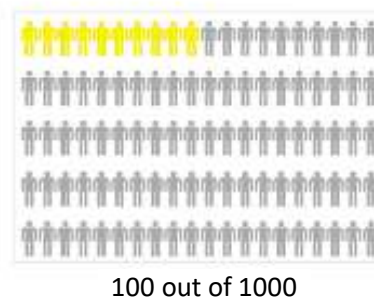
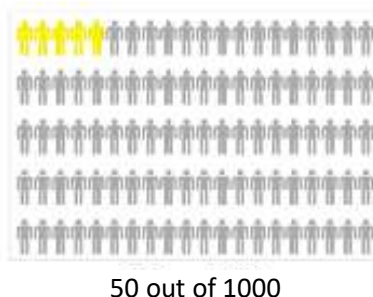
0 mg/day

2.5 mg/day

Risk of occurrence of at least one side effect after 12 months of treatment (e.g. osteoporosis, maculopathy, infections requiring hospitalisation and/or intravenous antibiotics, cardiopulmonary deterioration)



Worsening probability after 12 months of treatment



Administration route



intravenous

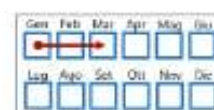


intravenous

Time to achieve a satisfactory clinical response to treatment



16 weeks



12 weeks

General state of health (Patient Global Assessment – PGA)
0=best possible
100=worst possible



This one

This one

Figure S2 - DCE about care pathway: Differences between subgroups defined according to presence/absence of nephropathy.

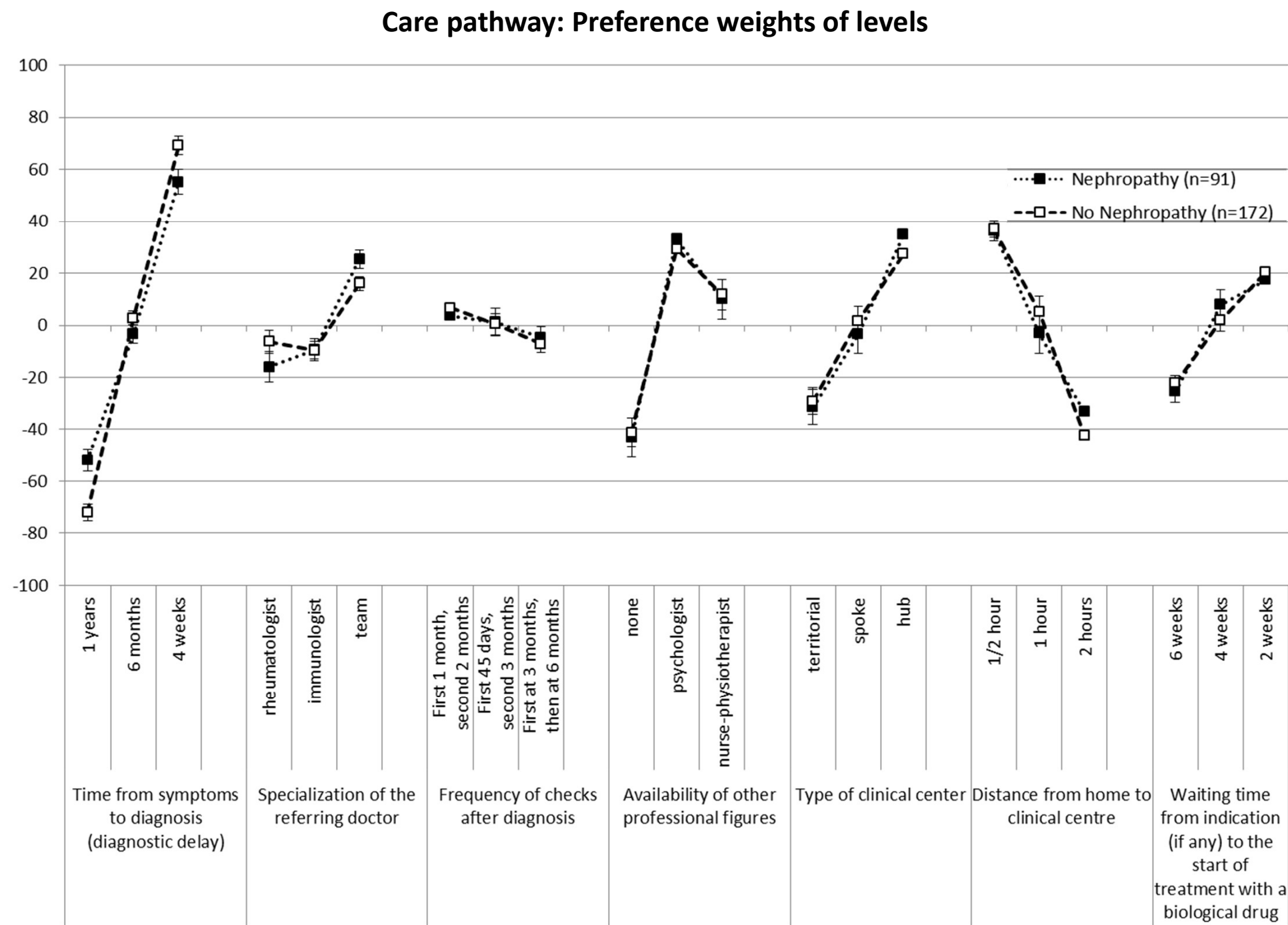


Figure S3 - DCE about care pathway: Differences between subgroups defined according to presence/absence of neuropsychiatric disorders.

Care pathway: Preference weights of levels

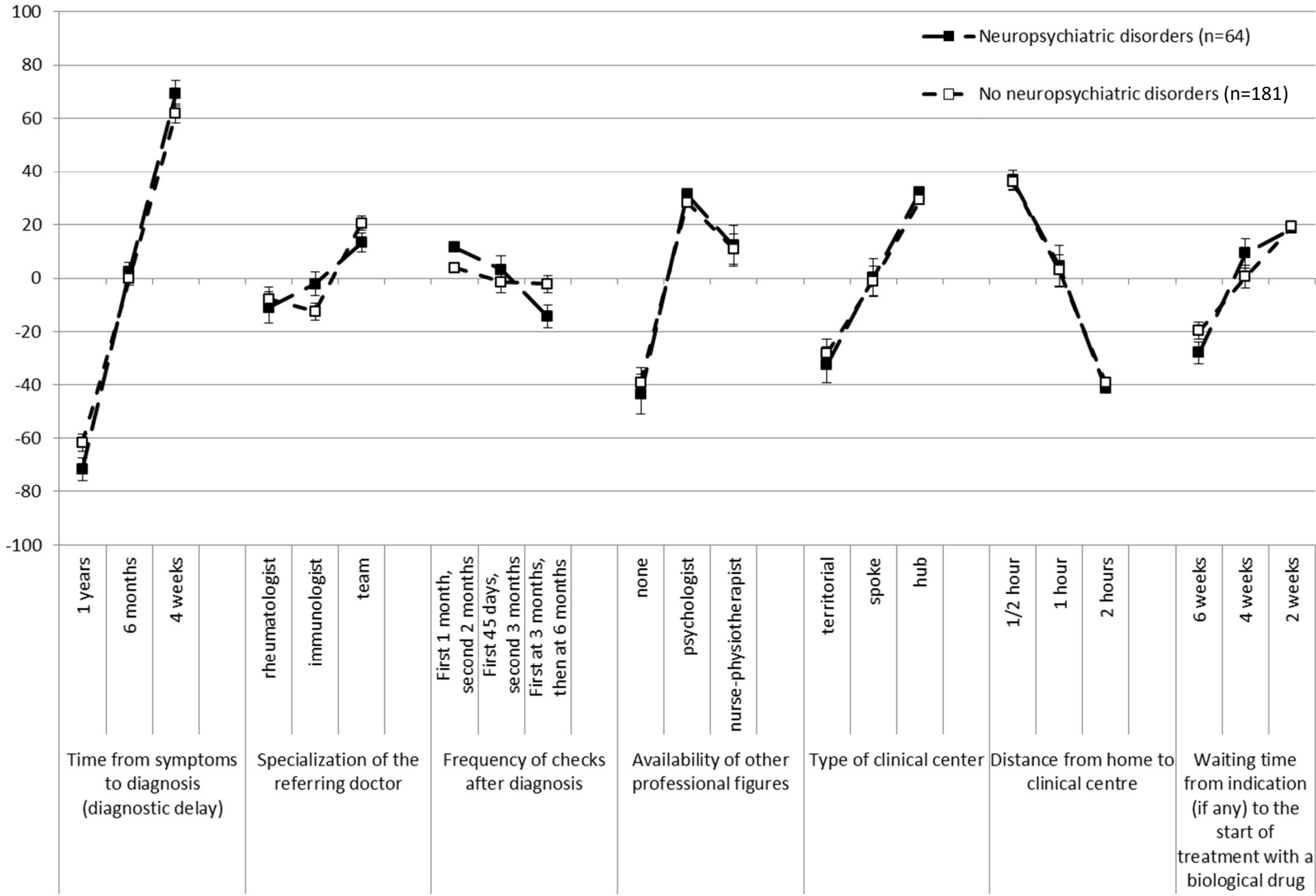


Figure S4 - DCE about therapy: Differences between subgroups defined according to presence/absence of nephropathy.

Treatments: Utilities by levels of attributes

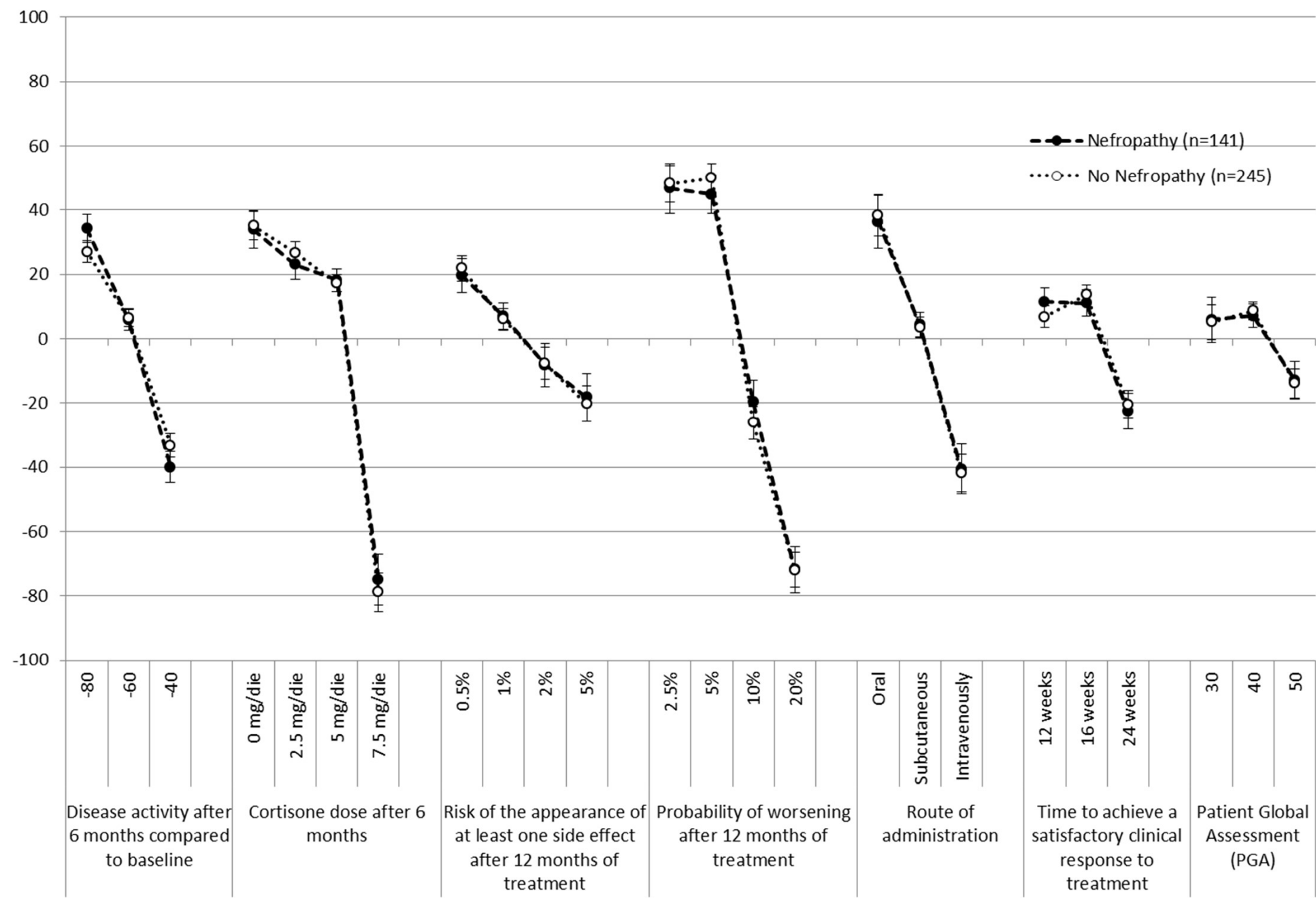


Figure S5 - DCE about therapy: Differences between subgroups defined according to presence/absence of neuropsychiatric disorders.

Treatments: Utilities by levels of attributes

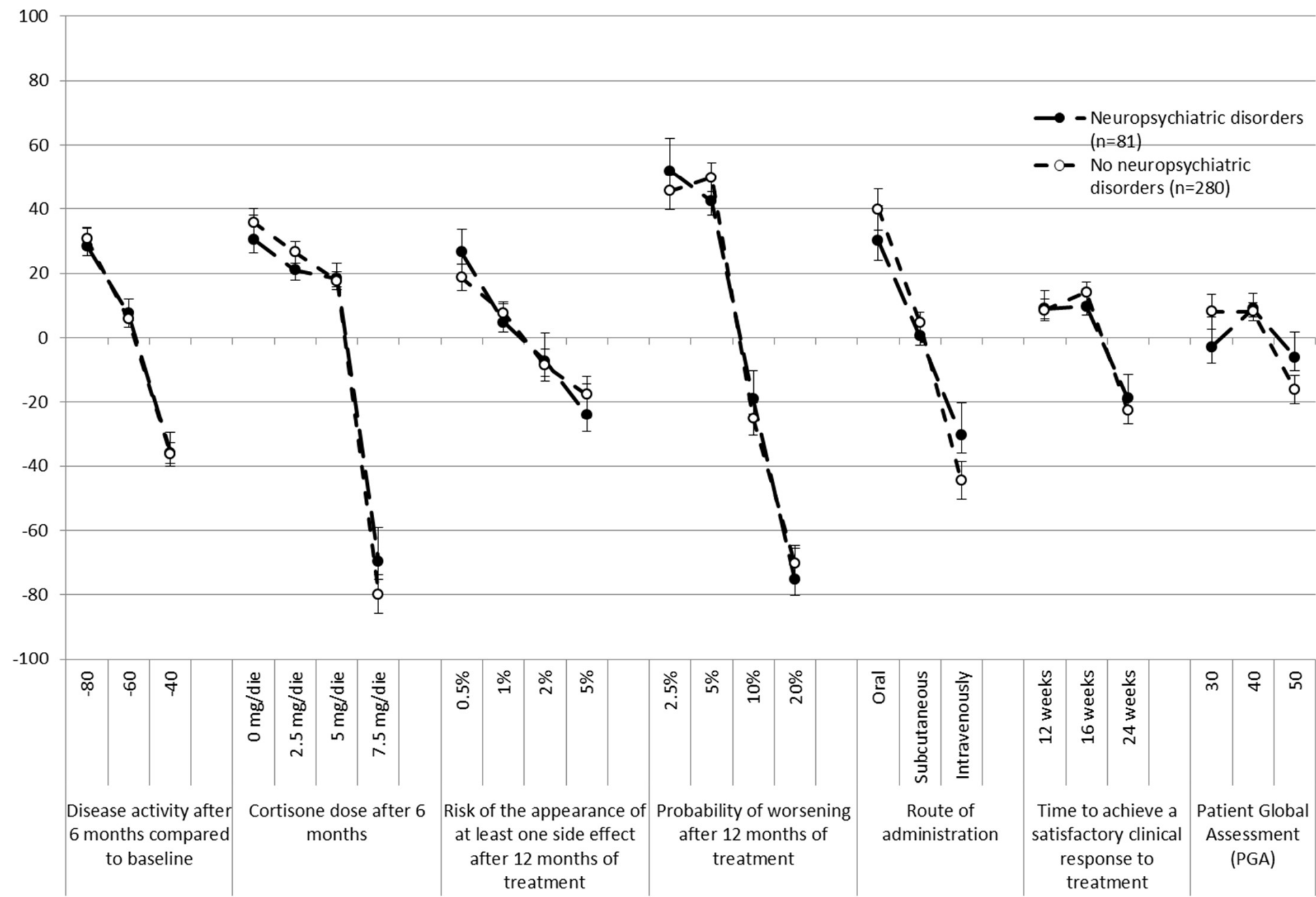


Figure S6 - Treatments: Utilities by levels of attributes.

