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Table SI. Patient demographics, clinical data, and laboratory results (N=179)

Variable	Value
Mean age (years, mean ± SD)	44.83 ± 15.40
Gender, n (%)	
Male	79 (44.1)
Female	100 (55.9)
Disease duration (months, mean ± SD)[a]	41.31 ± 53.85
Disease activity at baseline[b], n (%)	
Mild	98 (54.7)
Moderate	63 (35.2)
Severe	18 (10.1)
BMI, kg/m^2[c] (mean ± SD)	23.96 ± 3.93
Current smoking, n (%)[c]	38 (32.8)
Comorbidities, n (%)	
Atopic diseases	57 (31.8)
Atopic dermatitis	10 (5.6)
Asthma	20 (11.2)
Allergic rhinitis	34 (19.0)
Food allergy	10 (5.6)
Hypertension	26 (14.5)
Diabetes	16 (8.9)
Cancer	12 (6.7)
Thyroid disease	12 (6.7)
Dyslipidemia	10 (5.6)
Angioedema, n (%)	31 (17.3)
CIndU, n (%)	44 (24.6)
Dermographism	38 (21.2)
Cholinergic urticaria	8 (4.5)
Laboratory tests of interest[c], n (%)	
Total IgE (kUA/L, mean ± SD)	387.58 ± 762.38
Presence of specific IgE	56 (47.9)
Eosinophilia ≥ 500 /µL	24 (14.5)
ANA positivity	36 (32.7)
Abnormal TSH	21 (15.7)
Previous treatment, n (%)	
≥ 3 antihistamines together	85 (47.5)
Cyclosporine ≥ 3 months	26 (14.5)
Oral corticosteroids ≥ 3 months	25 (14.0)

[a]One patient with unknown onset date was omitted from the calculation. [b]Disease activity was categorized by UAS7 score; 0-6, well controlled; 7-15, mild; 16-27, moderate; 28-42, severe. [c]Including only patients for whom BMI (n = 78), smoking history (n=116), serum IgE (n=141), specific IgE (n=117), eosinophil count (n=165), ANA (n=110) or TSH (n = 134) was available.

SD, standard deviation; BMI, body mass index; CIndU, chronic inducible urticaria

Table SII. Treatment response to omalizumab 150mg/month and clinical course after treatment discontinuation (N=179)

Variable	Value
Treatment response	
Follow-up duration (months, mean ± SD)	22.18 ± 21.10
Treatment duration (months, mean ± SD)	15.44 ± 17.53
Total number of injections (mean ± SD)	13.96 ± 14.64
Rescue medications, n (%)	
Antihistamines	149 (83.2)
Cyclosporine	13 (7.3)
Oral corticosteroids	48 (26.8)
Treatment response at 12 weeks, n (%)	
Responders	133 (74.3)
Early responders within 4 weeks	88 (66.2)
Partial responders	35 (19.6)
No responders	11 (6.1)
Final responders at last follow-up, n (%)	158 (88.3)
Time to complete response (weeks, mean ± SD)	8.66 ± 6.73 (range: 4~32)
Maintain omalizumab 150mg/month	129 (81.6)
Reduced the treatment interval to 2-3wks	1 (0.6)
Updosed to 300mg/month	28 (17.7)
Clinical course after treatment discontinuation	
Reasons for discontinuation, n (%) (N=79)	
Complete remission	43 (54.4)
Insufficient response	19 (24.1)
Adverse effects	8 (10.1)
Pregnancy	5 (6.3)
Cost	4 (5.1)
Clinical course of patients who discontinued treatment due to complete remission, n (%) (N=43)	
No relapse, n (%)	11 (25.6)
Duration of follow-up (weeks, mean ± SD)	18.31 ± 15.12
Relapse, n (%)	32 (74.4)
Time to relapse (weeks, mean ± SD)	23.94 ± 23.13
Omalizumab retreatment, n (%) (N=8)	
Retreatment duration (weeks, mean ± SD)	33.73 ± 15.87
Final responders at last follow-up	6 (75.0)
Time to complete response (weeks, mean ± SD)	11.14 ± 6.75 (range: 4-22)

SD, standard deviation

Table SIII. Clinical factors associated the early complete response to low-dose omalizumab

Variable	Early complete (N = 88)	Non-early complete (N = 91)	Univariate		Multivariate	
			OR (95% CI)	P value	OR (95% CI)	P value
Mean age	44.82 ± 14.46	44.85 ± 16.44	1.000 (0.980-1.019)	0.990		
Female	48 (54.5)	52 (57.1)	1.111 (0.615-2.009)	0.726		
Disease duration (months)[a]	46.80 ± 58.71	36.07 ± 48.84	1.004 (0.998-1.010)	0.189		
Disease activity at baseline[b]						
Mild	55 (62.5)	43 (47.3)	-	-		
Moderate	25 (28.4)	38 (41.8)	0.514 (0.268-0.970)	0.043*	0.500 (0.253-0.970)	**0.042***
Severe	8 (9.1)	10 (11.0)	0.625 (0.221-1.718)	0.363		
BMI, kg/m^2[c]	23.68 ± 2.88	24.13 ± 4.52	0.970 (0.856-1.091)	0.620		
Current smoking[c]	17 (33.3)	21 (32.3)	1.048 (0.477-2.286)	0.907		
Comorbidities						
Atopic comorbidity	18 (20.5)	39 (42.9)	0.343 (0.174-0.658)	0.002*	0.354 (0.176-0.692)	**0.003***
Hypertension	12 (13.6)	14 (15.4)	0.868 (0.372-2.001)	0.740		
Diabetes	7 (8.0)	9 (9.9)	0.787 (0.270-2.212)	0.651		
Cancer	4 (4.5)	8 (8.8)	0.494 (0.128-1.632)	0.264		
Thyroid disease	6 (6.8)	6 (6.6)	1.037 (0.312-3.439)	0.950		
Dyslipidemia	6 (6.8)	4 (4.4)	1.591 (0.439-6.414)	0.484		
Angioedema	15 (17.0)	16 (17.6)	0.960 (0.440-2.097)	0.924		
CIndU	18 (20.5)	26 (28.6)	0.643 (0.319-1.274)	0.209		
Laboratory tests of interest[c]						
Total IgE (kUA/L)	375.18 ± 747.48	399.47 ± 786.68	1.000 (0.999-1.000)	0.850		
Presence of specific IgE	27 (49.1)	29 (46.8)	1.097 (0.530-2.276)	0.802		

Eosinophilia ≥ 500 /μL	11 (13.9)	13 (15.1)	0.908 (0.375-2.167)	0.828
ANA positivity	16 (30.8)	20 (34.5)	0.844 (0.376-1.877)	0.679
Abnormal TSH	10 (14.9)	11 (16.4)	0.893 (0.346-2.281)	0.812
Previous treatment				
≥ 3 antihistamines together	46 (52.3)	39 (42.9)	1.460 (0.811-2.643)	0.208
Cyclosporine ≥ 3 months	13 (14.8)	13 (14.3)	1.040 (0.449-2.407)	0.926
Oral corticosteroids ≥ 3 months	12 (13.6)	13 (14.3)	0.947 (0.402-2.217)	0.900

BMI, body mass index; CIndU, chronic inducible urticaria

Factors with p-value less than 0.1 in univariable analysis were entered into multivariable analysis.

[a]One patient with unknown onset date was omitted from the calculation.

[b]Disease activity was categorized by UAS7 score; 0-6, well controlled; 7-15, mild; 16-27, moderate; 28-42, severe.

[c]Including only patients for whom BMI (n = 78), smoking history (n=116), serum IgE (n=141), specific IgE (n=117), eosinophil count (n=165), ANA (n=110) or TSH (n = 134) was available.

Table 4. Clinical factors associated the final complete response to low-dose omalizumab

Variable	Complete response (N = 158)	Partial or no response (N = 21)	Univariate		Multivariate	
			HR (95% CI)	P value	HR (95% CI)	P value
Mean age	44.67 ± 15.38	46.02 ± 16.33	0.998 (0.990-1.008)	0.724		
Female	87 (55.1)	13 (61.9)	1.206 (0.881-1.652)	0.243		
Disease duration (months)[a]	42.07 ± 54.64	35.67 ± 49.89	1.001 (0.998-1.004)	0.484		
Disease activity at baseline[b]						
Mild	91 (57.6)	7 (33.3)	-	-		
Moderate	52 (32.9)	11 (52.4)	0.623 (0.441-0.880)	0.007*	0.641 (0.414-0.990)	**0.045***
Severe	15 (9.5)	3 (14.3)	0.598 (0.344-1.037)	0.067		
BMI, kg/m^2[c]	24.02 ± 4.01	23.65 ± 3.83	1.008 (0.949-1.071)	0.791		
Current smoking[c]	36 (35.3)	2 (14.3)	1.640 (1.079-2.494)	0.021*	1.570 (1.024-2.408)	**0.039***
Comorbidities						
Atopic comorbidity	49 (31.0)	8 (38.1)	0.644 (0.459-0.904)	0.011*	0.677 (0.447-1.025)	0.065
Hypertension	22 (13.9)	4 (19.0)	0.872 (0.555-1.368)	0.550		
Diabetes	13 (8.2)	3 (14.3)	0.875 (0.496-1.543)	0.643		
Cancer	9 (5.7)	3 (14.3)	0.600 (0.306-1.179)	0.138		
Thyroid disease	10 (6.3)	2 (9.5)	0.824 (0.434-1.566)	0.555		
Dyslipidemia	9 (5.7)	1 (4.8)	1.453 (0.740-2.852)	0.277		
Angioedema	27 (17.1)	4 (19.0)	0.980 (0.645-1.478)	0.912		
CIndU	37 (23.4)	7 (33.3)	0.747 (0.516-1.081)	0.121		
Laboratory tests of interest[c]						
Total IgE (kUA/L)	423.10 ± 815.32	159.54 ± 144.70	1.000 (1.000-1.000)	0.307		
Presence of specific IgE	48 (48.5)	8 (44.4)	1.036 (0.698-1.536)	0.862		
Eosinophilia ≥ 500 /µL	21 (14.5)	3 (15.0)	0.914 (0.575-1.451)	0.702		

ANA positivity	29 (30.9)	7 (43.8)	0.782 (0.504-1.212)	0.271
Abnormal TSH	17 (14.5)	4 (23.5)	0.843 (0.504-1.411)	0.516
Previous treatment				
≥ 3 antihistamines together	76 (48.1)	9 (42.9)	1.050 (0.768-1.435)	0.762
Cyclosporine ≥ 3 months	23 (14.6)	3 (14.3)	0.980 (0.633-1.533)	0.946
Oral corticosteroids ≥ 3 months	21 (13.3)	4 (19.0)	0.906 (0.572-1.434)	0.672

BMI, body mass index; CIndU, chronic inducible urticaria

Factors with p-value less than 0.1 in univariable analysis were entered into multivariable analysis.

[a]One patient with unknown onset date was omitted from the calculation.

[b]Disease activity was categorized by UAS7 score; 0-6, well controlled; 7-15, mild; 16-27, moderate; 28-42, severe.

[c]Including only patients for whom BMI (n = 78), smoking history (n=116), serum IgE (n=141), specific IgE (n=117), eosinophil count (n=165), ANA (n=110) or TSH (n = 134) was available