

TABLE 1 Demographic and anthropometric data of patient and control groups

Variables	Patient with NS (n=55)	First attack (n=11)	Relapsed (n=21)	Remission (n=23)	Control (n=40)	P value
Male n (%)	29 (52,7%)	6 (55%)	11 (52%)	12 (52%)	21 (%52,5)	>0.5
Age (year) (mean \pm SD)	7,8 \pm 3.75	7,8 \pm 3.4	7,8 \pm 3.45	8,1 \pm 3.33	7,9 \pm 3.62	0.412
Height (cm Z score) (mean \pm SD)	0,04 \pm 1.14	0,11 \pm 1.03	0,02 \pm 1.17	-0,04 \pm 1.08	0,09 \pm 1.09	0.314
Weight (kg Z score) (mean \pm SD)	0,10 \pm 0.98	0,14 \pm 0.86	0,08 \pm 1.08	0,09 \pm 1.12	0,13 \pm 1.11	0.340
BMI (kg/m ² Z score) (mean \pm SD)	0,06 \pm 0,94	0,11 \pm 0,92	0,05 \pm 1,11	0,05 \pm 1.14	0,09 \pm 1.02	0.276

Note: The significance value was accepted as P <0.05.

Abbreviations: BMI: body mass index; NS: nephrotic syndrome; SD: standard deviation.

TABLE 2 Comparison of laboratory data, IOS and spirometry parameters between first attack and relapsed patients

	First attack (n=11)	Relapsed (n=21)	P value
Laboratory data	Median (range)	Median (range)	
Serum albumin (g/dl)	1,7 (1,3-2,6)	2,08 (1,7-3,4)	0,004
Spot urine protein/creatinine(mg/dl/mg/dl)	9,8 (2,4-22)	10,4 (2,6-38,7)	>0,5
IOS parameters	Median (IQR:25-75)	Median (IQR:25-75)	
R5%	87,60 (79,10-112,30)	94,90 (85,55 - 111,65)	>0,5
R10%	98,60 (82,90-113,10)	98,20 (84,30 - 114,65)	>0,5
R15%	95,90 (79,60-117,20)	98,00 (87,65 - 110,10)	>0,5
R20%	96,30 (79,20-122,10)	101,10 (88,30 – 110,55)	>0,5
R (5-20) (kPa/L/s) ^a	0,146 (0,092-0,188)	0,135 (0,053 – 0,217)	>0,5
X5%	91,10 (67,80-138,10)	84,30 (63,25 – 113,10)	>0,5
X10%	106,60 (59,40- 193,20)	86,10 (38,05 – 171,45)	>0,5
X15 %	46,30 (-20,0 - 74,0)	55,70 (-15,85- 187,15)	>0,5
X20%	60,20 (-97,60- 126,20)	71,40 (-54,55- 202,95)	>0,5
F res (1/s) ^a	18,71 (14,63- 22,41)	17,33 (11,53 – 21,64)	>0,5
Z5%	90,60 (78,60 - 115,20)	92,10 (83,75 – 110,55)	>0,5
AX (kPa/L) ^a	1,60 (0,78 - 2,34)	1,21 (0,33 - 2,51)	>0,5
Spirometry parameters	Median (IQR:25-75)	Median (IQR:25-75)	
FVC %	82 (58,5- 90)	85 (76- 107)	0,366
FEV1 %	91 (66- 96,5)	86,5 (75,2- 101)	>0,5
FEV1/FVC %	107 (105- 111,5)	105 (95,5- 106,7)	0,276
PEF %	73 (54,5- 81)	76 (66,5- 92,2)	>0,5
MEF25-75 %	78 (64- 92,5)	79 (66,4-94,6)	>0,5

Note: The significance value was accepted as $P < 0.05$.

Abbreviations: %: percentage of predicted; AX: area of reactance; F res: resonant frequency; FVC: forced vital capacity; FEV1: forced expiratory volume in one second; IOS, impulse oscillometry; IQR, interquartile range; MEF25-75, forced mid expiratory flow; PEF: peak expiratory flow; R: resistance; X: reactance; Z, impedance.

^aMeasurements are given as raw value.

TABLE 3 Comparison of IOS parameters between nephrotic phase, remission and control groups

IOS	Nephrotic phase (n=32)	Remission (n=23)	Control (n=40)	P value ^a	P value ^b	P value ^c
	Median (IQR:25-75)	Median (IQR:25-75)	Median (IQR:25-75)			
R5%	93,5 (80,6-112,1)	86,3 (78,6- 88,4)	85,4 (76,9 – 85,3)	0,024	0,010	>0,5
R10%	98,4 (83,6 – 112,6)	92,4 (82,3- 98,1)	90,6 (81,5- 96,8)	0,044	0,038	>0,5
R15%	96,0 (85,07 – 111,5)	91,2 (63,7- 128,4)	92,4 (75,5- 100,1)	0,174	0,176	>0,5
R20%	98,7 (83,05– 117,5)	95,5 (83,2 – 112,7)	96,35 (80,8- 100,8)	0,391	>0,5	>0,5
R (5-20)^d (kPa/L/s)	0,140 (0,072 – 0,201)	0,072 (0,022- 0,191)	0,094 (0,060- 0,148)	0,007	0,028	>0,5
X5%	89,6 (64,8 – 116,4)	87,2 (73,4 – 104,3)	86,0 (65,1- 98,9)	0,250	0,194	0,417
X10%	88,3 (41,5 - 175,6)	72,2 (12,4 – 127,1)	68,7 (26,4- 106,5)	0,253	0,207	>0,5
X15 %	51,5 (-16,4 - 139,3)	46,6 (-12,7- 87,6)	41,2 (-16,5- 70,8)	0,147	0,131	0,335
X20%	66,0 (-59,85 - 171,7)	81,0 (12,7- 199,6)	84,6 (47,1 – 152,1)	0,200	0,291	0,471
F res (1/s)^d	17,8 (12,0 – 22,07)	15,4 (10,6 – 19,7)	16,2 (13,1 – 18,1)	0,156	0,283	>0,5
Z5%	91,8 (79,8 – 114,1)	85,8 (80,9- 98,7)	84,4 (78,6- 95,6)	0,041	0,033	>0,5
AX (kPa/L)^d	1,27 (0,39 - 2,32)	0,75 (0,33- 1,5)	0,72 (0,45 – 0,96)	0,024	<0,001	>0,5

Note: The significance value was accepted as P <0.05.

^a Comparison between nephrotic phase and remission period patients.

^b Comparison between nephrotic phase patients and control group.

^c Comparison between remission period patients and control group.

^d Measurements are given as raw value.

TABLE 4 Comparison of spirometry parameters between nephrotic phase, remission and control groups

Spirometry	Nephrotic phase (n=17)	Remission (n=13)	Control (n=15)	P value ^a	P value ^b	P value ^c
	Median (IQR:25-75)	Median (IQR:25-75)	Median (IQR:25-75)			
FVC %	84 (72- 95,5)	86 (76,5- 102,5)	94 (81- 98)	>0,5	0,372	>0,5
FEV1 %	89 (73,5- 99,5)	95 (84- 111)	104 (92- 110)	0,395	0,041	>0,5
FEV1/FVC %	105 (98- 108)	108 (103- 113)	112 (108- 116)	0,309	0,021	0,477
PEF %	76 (64,5- 86,5)	95 (85-122)	103 (83- 110)	0,005	0,005	0,085
MEF25-75 %	79 (66,4- 93,5)	98 (88-125)	111 (104-124)	0,040	0,001	>0,5

Note: The significance value was accepted as P <0.05.

^a Comparison between nephrotic phase and remission period patients.

^b Comparison between nephrotic phase patients and control group.

^c Comparison between remission period patients and control group.

TABLE 5 Correlation between the results of spirometry and IOS (n = 45)

	FEV1%	FVC%	FEV1/FVC %	PEF%	MEF25-75 %
R5%					
r	-0,347	-0,168	-0,375	-0,068	-0,442
p	0,019	0,269	0,011	0,655	0,002
R10%					
r	-0,363	-0,221	-0,289	-0,117	-0,388
p	0,014	0,144	0,054	0,446	0,009
R15%					
r	-0,340	-0,246	-0,196	-0,113	-0,285
p	0,022	0,103	0,196	0,461	0,058
R20%					
r	-0,281	-0,222	-0,123	-0,108	-0,201
p	0,062	0,143	0,422	0,480	0,185
R (5-20) ^a					
r	-0,113	0,062	-0,325	0,008	-0,384
p	0,459	0,687	0,029	0,958	0,009
X5%					
r	0,256	0,173	0,219	0,084	0,235
p	0,089	0,255	0,148	0,585	0,120
X10%					
r	-0,396	-0,441	-0,022	-0,194	-0,264
p	0,007	0,002	0,888	0,201	0,079
X15%					
r	-0,383	-0,152	-0,520	-0,183	-0,472
p	0,009	0,320	0,000	0,229	0,001
X20%					
r	0,033	-0,091	0,221	-0,062	0,201
p	0,828	0,550	0,145	0,687	0,186
F res ^a					
r	-0,159	-0,029	-0,237	-0,086	-0,348
p	0,297	0,850	0,117	0,573	0,019
Z5%					
r	-0,199	-0,043	-0,288	-0,099	-0,389
p	0,191	0,781	0,055	0,519	0,008
AX ^a					
r	-0,207	-0,085	-0,264	-0,064	-0,375
p	0,172	0,121	0,079	0,676	0,011

Note: The significance value was accepted as $P < 0.05$.

Abbreviations: r, correlation coefficient.

^a Measurements are given as raw value.

