

Table SI. Comparison of the medical history, clinical manifestations and valve lesions of children with RHD with and without HF.

Variable	RHD without HF (n=58)	RHD with HF (n=40)
History of RF (n=59), n (%)	37 (63.7)	22 (55.0)
Arthritis (n=54)	34 (58.6)	20 (50.0)
Chorea (n=5)	3 (5.2)	2 (5.0)
Erythema (n=10)	8 (13.7)	2 (5.0)
Skin nodule (n=3)	0 (0.0)	3 (7.5)
Clinical manifestations ^a		
Onset of symptoms (days), median (range)	46 (10-98)	56 (11-100)
Temperature (°C), median (range)	37.6 (36.7-38.5)	38.0 (36.6-38.5)
Dyspnea (n=31), n (%)	3 (5.2)	28 (70.0)
Intolerance to exercise (n=33), n (%)	2 (3.4)	31 (77.5)
Palpitation (n=41), n (%)	21 (36.2)	20 (50.0)
Recurrent ARF ^b (n=11), n (%)	6 (10.3)	5 (12.5)
Valve lesions ^c , n (%)		
MR (n=44)	26 (44.8)	18 (45.0)
MR & AR (n=32)	17 (29.3)	15 (37.5)
MS (n=19)	13 (22.4)	6 (15.0)
Mixed valve disease (n=3)	2 (3.5)	1 (2.5)

^aTwenty-eight RHD children without HF were discovered during auscultation as a part of routine examination. ^bDiagnosed according to revised Jones criteria 2015. ^cThere were no significant differences in both groups in regards to the distribution of valve lesions. RHD, rheumatic heart disease; HF, heart failure; RF, rheumatic fever; ARF, acute rheumatic fever; AR, aortic regurgitation; MR, mitral regurgitation; MS, mitral stenosis. Onset of symptoms and temperature are expressed as medians and ranges.

Table SII. Comparison of the laboratory investigations and echocardiography findings of the patient and control groups.

Variable	Control group (n=44) (a)	RHD without HF (n=58) (b)	RHD with HF (n=40) (c)	P-value
Hb% (g/dl) median (range)	12.3 (9.4-13.8)	12.3 (10.6-14.0)	11.5 (10.0-14.0)	c vs. a and b 0.004
Platelet count (x10 ³ /ml) median (range)	195 (125-350)	220 (136-424)	245 (144-456)	a vs. b and c <0.001
TLC (x10 ³ /ml) median (range)	7.2 (4.0-10.4)	11.2 (7.3-18.0)	14.9 (4.8-29.0)	a vs. b b vs. c a vs. c <0.001
CRP (mg/dl) median (range)	2.9 (0.6-5.0)	34 (12-96)	36.5 (12-96)	a vs. b and c <0.001
ASO (IU/ml) median (range)	8.0 (0.4-33)	153 (100-400)	199 (122-400)	a vs. b b vs. c a vs. c <0.001
Ejection fraction median (range)	67.0 (63-83)	65.5 (63-80)	44 (35-55)	c vs. a and b <0.001
Fractional shortening (%) median (range)	28.8 (26-44)	27.5 (26-41)	18.1 (17-27)	c vs. a and b <0.001
MMP-9 (ng/ml) mean ± SD (range)	61.0±22.8 (22-98)	356.5±74.7 (199-489)	422.3±63.5 (286-520)	a vs. b b vs. c a vs. c <0.001

Kruskal-Wallis test by ranks and one-way analysis of variance (ANOVA) with post hoc test were used to compare medians and means, respectively. P-value indicates the result of the Kruskal-Wallis or ANOVA test. Statistically significant differences are written in bold print. Groups are represented by lowercase letters; above each P-value, the significantly different groups are specified. RHD, rheumatic heart disease; HF, heart failure; Hb%, hemoglobin concentration; ASO, antistreptolysin O; CRP, C reactive protein; MMP-9, matrix metalloproteinase-9; TLC, total leukocyte count; vs., versus.

Table SIII. Cross tabulation of the patients in regards to MMP-9 results.

MMP-9 (ng/ml)	RHD with HF (n=40)	RHD without HF (n=58)	Total
≥386.9	38	15	53
<386.9	2	43	45
Total	40	58	98

RHD, rheumatic heart disease; HF, heart failure; MMP-9, matrix metalloproteinase-9.

Table SIV. Correlation between the MMP-9 level and all variables in the studied groups.

Variable	Control group		RHD without HF		RHD with HF	
	r	P-value	r	P-value	r	P-value
Onset of symptoms (days)			-0.13	NS	0.13	NS
Age (years)	0.19	NS	-0.09	NS	0.09	NS
Body weight (kg)	-0.21	NS	-0.19	NS	-0.19	NS
Temperature (°C)	-0.09	NS	0.12	NS	-0.11	NS
Hb%	0.11	NS	-0.03	NS	0.04	NS
Platelet count (10 ³ /ml)	-0.05	NS	0.15	NS	-0.09	NS
TLC (10 ³ /ml)	0.03	NS	-0.06	NS	-0.13	NS
CRP (mg/dl)	-0.11	NS	0.14	NS	0.29	NS
ASO (IU/ml)	0.03	NS	-0.02	NS	0.15	NS
Ejection fraction	-0.12	NS	0.15	NS	-0.40	0.01
Fractional shortening (%)	0.06	NS	0.04	NS	-0.37	0.02

Spearman correlation coefficient test was performed. Statistically significant differences are written in bold print; NS, not significant. RHD, rheumatic heart disease; HF, heart failure; MMP-9, matrix metalloproteinase-9; ASO, antistreptolysin O; CRP, C reactive protein, Hb%, hemoglobin concentration; TLC, total leukocyte count.