

Neuregulin-1 β , Biomarkers of Inflammation and Myocardial Fibrosis in Heart Failure Patients

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Table P1. The Concentration of Biomarkers Depending on the Functional Class of Chronic Heart Failure in the Studied Groups

Indicator	HFpEF			HFrEF		
	NYHA II	NYHA III-IV	p	NYHA I-II	NYHA III-IV	p
Neuregulin-1 β , ng/ml	0.79 (0.32; 2.01)	0.97 (0.55; 1.78)	0.820	1.12 (0.95; 2.58)	0.55 (0.39; 1.11)	0.110
NTproBNP, pg/ml	709 (441; 1131)	530 (457; 770)	0.427	426 (188; 869)	4714 (1980; 12072)	0.003
hsCRP, mg/l	4 (1; 7)	2 (1; 3)	0.571	1.04 (0.75; 2.57)	6 (2; 21)	0.012
IL-6, pg/ml	3.02 (1.50; 6.40)	2.56 (1.50; 5.15)	0.551	<1.50	10.08 (3.81; 25.45)	0.007
TGF- β , pg/ml	8026 (3436; 14705)	6503 (2874; 7661)	0.271	4746 (4020; 7525)	12630 (5066; 19935)	0.139
sVCAM-1, ng/ml	781 (695; 935)	963 (761; 1305)	0.190	654 (552; 837)	1038 (750; 1242)	0.096
ST-2, ng/ml	30 (16; 35)	29 (15; 37)	0.865	31 (29; 32)	41 (32; 53)	0.042
MMP-9, pg/ml	65 (46; 92)	43 (33; 89)	0.250	111 (53; 179)	50 (35; 119)	0.247
Galectin-3, ng/ml	16 (14; 18)	14 (10; 18)	0.235	17 (16; 21)	18 (15; 21)	0.890
Data are presented as Me (25%; 75%)						
CHF – chronic heart failure, HFpEF – heart failure with preserved ejection fraction, HFrEF – heart failure with reduced ejection fraction, NT-proBNP – N-terminal B-type natriuretic hormone propeptide, MMP-9 – matrix metalloproteinase-9, sVCAM-1 – soluble vascular endothelial adhesion molecule type 1, TGF- β – transforming growth factor β , ST-2 – stimulating growth factor, IL-6 – interleukin 6, hsCRP – highly sensitive C-reactive protein.						

Table P2. Results of Correlation Analysis of Neuregulin-1 β with Demographic, Laboratory Parameters and Biomarkers of Inflammation and Fibrosis

Indicator	Patient groups			
	HFpEF		HFrEF	
	r_s	p	r_s	p
Demographic indicators				
Age	0.120	0.432	0.136	0.408
BMI	0.050	0.746	0.148	0.369
Laboratory indicators				
Hemoglobin	0.025	0.870	0.136	0.408
Glucose	0.107	0.495	0.226	0.186
LDL	0.213	0.181	-0.299	0.147
Creatinine	0.113	0.461	0.149	0.366
NTproBNP	-0.011	0.942	-0.053	0.756
Biomarkers				
hsCRP	0.378	0.023	-0.099	0.562
IL-6	0.378	0.014	-0.181	0.285
TGF- β	0.603	<0.001	0.237	0.158
sVCAM-1	0.030	0.852	0.002	0.988
ST-2	0.113	0.448	0.116	0.494
MMP-9	-0.167	0.291	0.244	0.145
Galectin-3	0.191	0.226	0.036	0.834

r_s – Spearman's rank correlation coefficient

HFpEF – heart failure with preserved ejection fraction, HFrEF – heart failure with reduced ejection fraction, BMI – body mass index, LDL – low density lipoproteins, NT-proBNP – N-terminal B-type natriuretic hormone propeptide, NRG-1 – neuregulin-1 β , MMP-9 – matrix metalloproteinase-9, sVCAM-1 – soluble vascular endothelial adhesion molecule type 1, TGF- β – transforming growth factor β , ST-2 – stimulating growth factor, IL-6 – interleukin 6, hsCRP – highly sensitive C-reactive protein.

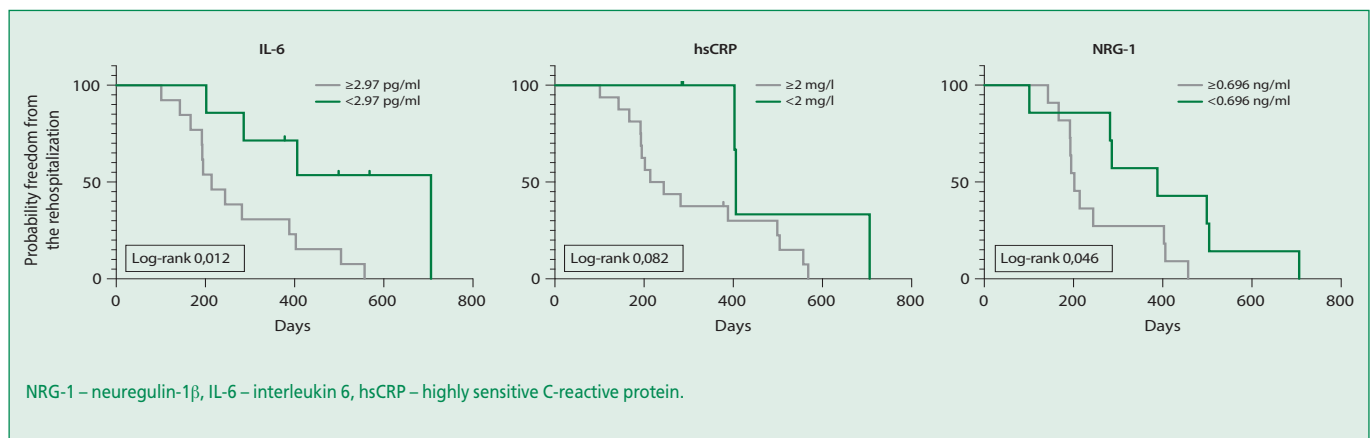


Figure P1. Kaplan-Meier curve of the risk of rehospitalization depending on the level of markers of systemic inflammation