

Correlation of Baseline Plasma and Inguinal Connective Tissue Metalloproteinases and Their Inhibitors With Late High-Pressure Endoleak After Endovascular Aneurysm Repair: Long-term Results

George S. Georgiadis et al. *J Endovasc Ther.* 2019;26(6).

Supplementary Table 1. Linear Regression Analysis^a of Baseline Circulating and Tissue Biomarkers With the Presence of Hernia at Primary Endovascular Aneurysm Repair.

	Coefficient	SE	Wald χ^2	OR (95% CI)	p
Tissue homogenate					
TIMP-1	0.098	0.094	1.080	1.102 (0.917 to 1.325)	0.299
TIMP-2	1.218	0.811	2.259	3.381 (0.690 to 16.557)	0.133
MMP-9 (pro- and active)	0.245	0.154	2.541	1.277 (0.945 to 1.726)	0.111
MMP-2 (pro- and active)	−0.104	0.199	0.274	0.901 (0.609 to 1.332)	0.600
Blood sample					
TIMP-1	0.055	0.124	0.197	1.057 (0.828 to 1.349)	0.657
TIMP-2	−0.181	0.240	0.570	0.834 (0.521 to 1.336)	0.450
MMP-9 (pro- and active)	−0.106	0.049	4.785	0.899 (0.817 to 0.989)	0.029
MMP-2 (pro- and active)	0.035	0.062	0.308	1.035 (0.916 to 1.170)	0.579
Zymography of tissue homogenate					
ProMMP-9	−0.020	0.020	1.019	0.980 (0.942 to 1.019)	0.313
Active MMP-9	0.011	0.049	0.049	1.011 (0.919 to 1.112)	0.825
ProMMP-2	0.007	0.024	0.091	1.007 (0.962 to 1.055)	0.763
Active MMP-2	0.030	0.035	0.723	1.030 (0.962 to 1.103)	0.395
Total (pro- and active) MMP-9	−0.021	0.017	1.478	0.980 (0.947 to 1.013)	0.224
% Active MMP-9	0.023	0.030	0.587	1.023 (0.965 to 1.084)	0.444
Total (pro- and active) MMP-2	0.013	0.014	0.819	1.013 (0.985 to 1.041)	0.365
% Active MMP-2	−1.193	0.028	0.134	1.010 (0.956 to 1.068)	0.715

Abbreviations: CI, confidence interval; MMP, matrix metalloproteinases; OR, odds ratio; SE, standard error; TIMP, tissue inhibitors of metalloproteinases.

^aDegree of freedom equals 1.

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Supplementary Table 2. Multiple Linear Regression Analysis to Test for Baseline Biomarkers Predicting Late Endoleak in Patients With vs Without a Hernia Prior to Endovascular Aneurysm Repair.

Parameter	Coefficient	t	p
Tissue homogenate			
TIMP-1	−0.004	−0.021	0.984
TIMP-2	−0.018	−0.109	0.913
MMP-9 (pro- and active)	−0.005	−0.033	0.974
MMP-2 (pro- and active)	−0.012	−0.087	0.931
Hernia present	0.134	0.993	0.325
Blood sample			
TIMP-1	−0.002	−0.012	0.990
TIMP-2	0.011	0.083	0.934
MMP-9 (pro- and active)	0.000	−0.002	0.998
MMP-2 (pro- and active)	−0.760	−0.565	0.574
Hernia present	0.136	0.997	0.323
Zymography of tissue homogenate			
Pro-MMP-9	0.357	2.594	0.012
Active MMP-9	−0.259	−1.891	0.044
Pro-MMP-2	−0.093	−0.605	0.548
Active MMP-2	0.182	1.174	0.245
Hernia present	0.139	1.124	0.266
Total (pro- and active) MMP-9	0.264	0.426	0.088
% Active MMP-9	−0.173	1.733	0.273
Total (pro- and active) MMP-2	0.120	−1.106	0.380
% Active MMP-2	−0.147	0.885	0.296
Hernia present	0.154	1.214	0.230

Abbreviations: MMP, matrix metalloproteinases; TIMP, tissue inhibitors of metalloproteinases.

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Supplementary Table 3. Multiple Linear Regression Analysis to Test for Baseline Biomarkers Predicting Late Endoleak in Patients Presenting With Moderate vs Large (≥ 60 mm) Aneurysms.

Parameter	Coefficient	t	p
Tissue homogenate			
TIMP-1	0.020	0.108	0.914
TIMP-2	0.025	0.156	0.876
MMP-9 (pro- and active)	0.010	0.066	0.948
MMP-2 (pro- and active)	−0.030	−0.221	0.826
Large AAA present	0.033	0.245	0.807
Blood sample			
TIMP-1	0.003	0.021	0.983
TIMP-2	−0.002	−0.011	0.991
MMP-9 (pro- and active)	−0.039	−0.290	0.773
MMP-2 (pro- and active)	−0.070	−0.510	0.612
Large AAA present	0.005	0.037	0.971
Zymography of tissue homogenate			
Pro-MMP-9	0.336	2.439	0.018
Active MMP-9	−0.256	−1.886	0.041
Pro-MMP-2	−0.083	−0.540	0.591
Active MMP-2	0.180	1.164	0.249
Large AAA present	−0.030	−0.244	0.808
Total (pro- and active) MMP-9	0.227	1.560	0.124
% Active MMP-9	−0.147	−1.000	0.321
Total (pro- and active) MMP-2	0.132	0.972	0.335
% Active MMP-2	−0.153	−1.095	0.278
Large AAA present	−0.051	−0.400	0.691

Abbreviations: AAA, abdominal aortic aneurysm; MMP, matrix metalloproteinases; TIMP, tissue inhibitors of metalloproteinases.