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Published in:
E J V E S Extra

DOI (link to publication from Publisher):
[10.1016/j.ejvsextra.2006.05.001](https://doi.org/10.1016/j.ejvsextra.2006.05.001)

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Publication date:
2006

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Urbonavicius, S., Heegaard, N. H., Honore, B., Vorum, H., & Lindholt, J. S. (2006). Autoantibodies in cases with abdominal aortic aneurysms are seldom and without association with progression rate. *E J V E S Extra*, 12(2), 13-14. <https://doi.org/10.1016/j.ejvsextra.2006.05.001>

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SHORT REPORT

Autoantibodies in Cases with Abdominal Aortic Aneurysms are Seldom and without Association with Progression Rate

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Introduction. Antibodies against *Chlamydia pneumoniae* are associated with the progression of abdominal aortic aneurysms (AAA), but cross-react with immunoglobulins in AAA walls indicating an autoimmune reaction.

Report. Of 82 men with a small AAA followed for 1–5 years, 17% (10–27%) had antibodies against immunoglobulin, 3.7% had antinuclear antibodies (ANA), 19.5% (11–30%) had antinuclear core antibodies (ANCA), 2.4% had anti-beta-2-gp1 IgG and 3.7% antibodies against cardiolipin.

The presence of antibodies against immunoglobulin and ANCA were not correlated with expansion rate; 2.61 and 2.76 mm/year, respectively, compared to 2.40 and 2.39 mm/year annually among those without such antibodies.

Discussion. Known autoantibodies are seldomly present in AAA and seem not to influence the progression of AAA.

Keywords: Aortic aneurysm; Pathophysiology; Expansion; Autoimmune.

Introduction

Recently, we published results showing that antibodies against *Chlamydia pneumoniae* outer membrane protein (OMP) purified from patients with abdominal aortic aneurysms (AAA) react with OMP, but we could not detect any sign of OMP in the wall of AAAs, but other proteins – possibly immunoglobulins – were cross-reacting with the anti-OMP antibody.¹

The correlation between antibodies against Cp and the progression of small AAA² strongly suggests a pathogenetic role of the protein that caused the antibodies to be produced. From the study, we cannot conclude that this protein was OMP, or that another protein with similar epitopes as OMP. The missing presence of OMP suggests another protein to be involved. The demonstrated potential cross-reaction

with immunoglobulins could indicate an autoimmune reaction.

Consequently, we have analyzed serum samples from our cohort of screen detected AAA for antibodies against immunoglobulin and other known autoantibodies in order to study the frequency of autoantibodies in AAA and their correlation with the expansion rate of AAA.³

Report

Serum from 82 men with a small AAA² were controlled annually for up till 5 years for expansion, and their baseline serum samples were tested for various known autoantibodies at the only laboratory in Denmark performing the tests routinely.

The median max. initial AAA-diameter: 32 mm. Median follow up time was 4.11 years, and median expansion rate was 2.44 mm/year. The interobserver variation of the diameter measurements was 1.4 mm.⁴

The results are summarised in Table 1; the frequencies of autoantibodies were limited; 17% (95% C.I.: 10–27%) had IgM and/or IgG antibodies against

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Table 1. Presence of autoantibodies in a cohort of patients with small abdominal aortic aneurysms, and their association with mean annual expansion rate

Autoantibodies	Present	N = 82	Frequency	95% C.I.	Expansion rate (mm/year)	P-value*
Ig against Immunoglobulin	+	13	15.9%	8.7–25.6%	2.67	0.68
	–				2.40	
Antinuclear antibodies	+	3	3.7%	0.8–10.3%	3.86	0.18
	–				2.44	
Anti nuclear core antibodies	+	16	19.5%	0.3–28.5%	3.01	0.49
	–				2.45	
Anti-beta-2-gpI Immunoglobulin	+	2	2.4%	0.3–8.5%	4.51	0.39
	–				2.47	
Ig against cardiolipin	+	3	3.7%	0.8–10.3%	2.48	0.88
	–				2.58	

*P-values by Wilcoxon's rang sum test.

immunoglobulin, 3.7% (0.8–10.3%) had antinuclear antibodies (ANA), 19.5% (11–30%) had antinuclear core antibodies (ANCA), 2.4% (0.3–8.5%) had anti-beta-2-gpI IgG and 3.7% (0.8–10.3%) had IgM and/or IgG antibodies against cardiolipin.

The presence of antibodies against immunoglobulin and ANCA were not correlated with aneurysmal progression rate; 2.67 and 3.01 mm/year, respectively, compared to 2.40 ($P = 0.68$) and 2.45 ($P = 0.49$) mm/year annually among those without such antibodies.

Discussion

Known autoantibodies, including antibodies against immunoglobulin, are seldomly present in AAA and seem not to influence the progression of AAA.

References

- LINDHOLT JS, STOVING J, OSTERGAARD L, URBONAVICIUS S, HENNEBERG EW, HONORE B *et al.* Serum antibodies against *Chlamydia pneumoniae* outer membrane protein cross-react with the heavy chain of immunoglobulin in the wall of abdominal aortic aneurysms. *Circulation* 2004;**109**:2097–2102.
- LINDHOLT JS, JUUL S, VAMMEN S, LIND I, FASTING H, HENNEBERG EW. Immunoglobulin A antibodies against *Chlamydia pneumoniae* are associated with expansion of abdominal aortic aneurysm. *Br J Surg* 1999;**86**:634–638.
- LINDHOLT JS, JORGENSEN B, SHI GP, HENNEBERG EW. Relationships between activators and inhibitors of plasminogen, and the progression of small abdominal aortic aneurysms. *Eur J Vasc Endovasc Surg* 2003;**25**:546–551.
- LINDHOLT JS, VAMMEN S, JUUL S, FASTING H, HENNEBERG EW. The validity of ultrasonographic scanning as screening method for AAA. *Eur J Vasc Endovasc Surg* 1999;**17**:472–475.

Accepted 1 May 2006