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SEARCHING FOR BIOMARKERS OF ANEURYSMAL DISEASE

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Background. We have previously set up the conditions for comparing the proteins released from arterial pathological and control tissues using a proteomic approach. Our objective is to assess whether differentially released proteins could represent biomarkers for abdominal aortic aneurysm (AAA).

Methods and Results. Different regions of layers (luminal/abluminal) of the intraluminal thrombus (ILT) of AAA were incubated in protein-free medium, and the released proteins were analyzed by 2D-DIGE. In total, 31 proteins were identified by Mass Spectrometry (MS): 14 proteins were increased and 17 proteins were decreased in the supernatant of luminal vs abluminal layer of ILT. Among the differently released proteins, we have identified α1antitrypsin (ATT). Compared with the abluminal layer, ATT release was increased in the luminal layer of AAA. The interest of this approach is that we can identify proteins potentially released to the blood which could serve as biomarkers of the pathology. We have shown that circulating ATT levels are significantly increased in the serum of patients with AAA relative to healthy subjects (147(131-168) *v.* 125.5(114-135.5) mg/dL (p<0.0001); n=35). Moreover, a positive correlation between ATT and AAA growth in the previous 12 months was observed (r=0.55; p=0.004).

Conclusions. ATT release is increased in the luminal part of AAA, and ATT plasma levels are increased in AAA patients compared with healthy subjects. ATT seems to be a promising biomarker of AAA growth.

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