Abstract: **P365**

**Leukotriene B4 plasma levels are associated to abdominal aortic aneurysm prevalence and progression**

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**Background:** Previous human and experimental studies have suggested a role of arachidonic acid pathway in abdominal aortic aneurysm (AAA). Arachidonic acid-derived metabolites, such as leukotriene B4 (LTB4), have been previously observed in human AAA tissue, potentially contributing to neutrophil inflammatory recruitment.

**Purpose:** To investigate the potential association of LTB4 plasma levels with AAA presence and progression.

**Methods:** We obtained blood samples from 493 AAA patients (maximal aortic diameter =30 mm) within a population-based ultrasound-screening trial in Danish men and from 198 age-matched screened negative controls. LTB4 plasma levels were assessed by ELISA. During a median follow-up of around 5 years, 141 AAA patients reached criteria for vascular surgical repair.

**Results:** LTB4 plasma levels in AAA patients were higher than in controls [976.6(432.9-16983.7 vs 316.5 (44.9-613.5) pg/ml, P<0.001], and individuals in the upper tertile of LTB4 at baseline had higher probability of having AAA (Odds Ratio=8.3, 95% confidence interval, 4.2;16.5, P<0.001). AAA patients at the upper tertile of LTB4 at baseline had a 60% higher risk of needing surgical repair during the follow-up (Hazard Ratio=1.6, 95% confidence interval, 1.2;2.3, P=0.003).

**Conclusions:** LTB4 is associated to AAA presence and progression suggesting its potential use as a prognostic marker. Future studies are needed to clarify the pathogenic role of LTB4 in AAA.