Collagen and elastin metabolites as biomarkers for aortic aneurysm

Thomas Bögl, Christian Klampfl and Wolfgang Buchberger

Institute of Analytical Chemistry, Johannes Kepler University, 4040 Linz, Austria

Aortic aneurysms (AA) are focal dilatations, which are commonly diagnosed incidentally. Due to the absence of distinct symptoms, complications like Aortic Dissection (AD) are frequent, which causes a high mortality rate. Additionally, the pathogenesis is still not understood sufficiently, which makes the diagnosis even more challenging. In recent years, efforts have been made to discover biomarkers to be implemented in routine examinations, in order to prevent patients from momentous consequences.

One of the main causes of AD is the degradation of the stabilizing structure [1]. Elastin and collagen are the main proteins of these structures, and are responsible for the aorta's flexibility. Studies have already proposed that aortic dilatation leads to increased levels of these proteins [2,3]

In this study, hydroxyproline, hydroxylysine, glycine as representatives for collagen as well as desmosine and isodesmosine as indicators for elastin have been chosen as possible biomarkers. Therefore three groups of different AA phenotypes, namely biscupid aortic valve associated aneurysms (TAV-A), biscupid aortic valve-associated aneurysms (BAV-A) and triscupid aortic-valve-associated aortic dissections (TAV), were compared with a healthy peer group.

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