

ROLE OF EPIGENETIC MECHANISM IN THE PATHOLOGY OF ABDOMINAL AORTIC ANEURYSM

Smriti M Krishna and **Jonathan Golledge**

Queensland Research Centre for Peripheral Vascular Disease - James Cook University, Australia

Abdominal aortic aneurysm (AAA) is an abnormal dilatation in a weakened region of the main abdominal blood vessel. Approximately 5% of men over 65 years of age have an AAA. Prevalence of AAA is increasing rapidly in an aging population and becoming increasingly common in women. Patients with AAA present an increased risk of major cardiovascular events such as stroke and myocardial infarction, and AAA is amongst the leading 15 causes of death for people aged >60 years. Surgical intervention is currently the method for AAA correction but is associated with significant peri-operative mortality and currently there is no medical cure for AAA. Detailed information regarding the aneurysms is a prerequisite for targeted drug development for AAAs and currently it is still limited even after numerous

genetic studies conducted in the past. Analysis of disease-state epigenome when compared to the normal epigenome provides a valuable foundation to study the regulation of gene expression crucial to the development of complex diseases. DNA methylation and histone modifications are two important epigenetic mediators of transcriptional repression. Several lines of evidences suggest an important role of altered epigenetic status in inflammation, proliferation and remodelling processes, which are also associated with the development of AAA indicating that epigenetic changes are crucial in the development and progression of AAA. In this study, an over view of evidences of the role of epigenetic mechanisms in AAA pathology is presented.

smriti.krishna@jcu.edu.au