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A STUDY OF THERAPEUTIC TARGETS IN CORONARY ATHEROSCLEROSIS

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ABSTRACT

Over the past decade, the use of Raman Spectroscopy as a tool for Biochemical analysis in Disease Biology is being recognized as a promising means of diagnosis amidst biological researchers as well as clinical laboratories. With an excitation wavelength across a wide range of visible and near-infrared wavelengths, the combination of Raman Spectroscopy along with Microscopy has proved to be a very powerful tool in imaging Biological samples. This is a first in its kind study, as the arterial tissues from coronary arteries and the Aorta of live patients suffering from Cardiovascular diseases from the Indian Subcontinent are studied using Raman Spectroscopy as opposed to the post mortem sample studies that are generally performed. In order to establish a near perfect Control population for invasive studies of human heart tissues that are Atherosclerotic, we use tissues excised as a part of the standard of care procedure from Aortic Valve Replacement (AVR) Surgery patients, as they possess healthy arteries and most of the time their aortic tissues are free from Atherosclerotic lesions. We propose a new means to compare these tissues by their characterization using Micro Raman Spectroscopy, to lay the path for further investigative means by establishing AVR as a control cohort with which the Atherosclerotic patient tissues could be analyzed, and supplemented with Biochemical and Histopathological findings.