



## **TITLE: Comparison of Coronary Vessel Sizing Using Coronary Angiography versus Intravascular Ultrasound in Egyptian Patients**

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### **ABSTRACT**

Background: Coronary artery disease is a leading cause of death worldwide. Intravascular imaging is an important tool in the arsenal of each interventional cardiologist. While angiography provides a two-dimensional image of a three-dimensional structure, intravascular imaging enhances understanding by providing detailed cross-sectional images. This study aimed to investigate the discrepancies in coronary vessel sizing between quantitative coronary angiography (QCA) and intravascular ultrasound. Methods: This cohort study was conducted on 69 patients who were referred for elective coronary angiography. Patients were subjected to history taking, examination, blood samples, electrocardiogram, and echocardiography. Then, a comparison of each vessel's luminal diameter by QCA and IVUS was done. Results: The study included 69 patients; The mean age was  $54.7 \pm 9.7$ . There was a statistically significant difference between the studied vessels regarding the discrepancy between luminal diameters measured by IVUS and QCA. IVUS luminal diameter was larger than QCA luminal diameter (the median difference in measures of QCA and IVUS in the left main artery, LAD, LCX, and RCA were -0.8, -0.55, -0.4, and -0.5 respectively). Furthermore, there is a statistically significant difference between the studied vessels regarding the presence of

a difference  $>0.75$  mm between the luminal diameters measured by IVUS and QCA. IVUS luminal diameter was larger than QCA luminal diameter (the median difference in measures of QCA and IVUS in the left main artery, LAD, LCX, and RCA were -0.8, -0.55, -0.4, and -0.5 respectively). Furthermore, there is a statistically significant difference between the studied vessels regarding the presence of a difference  $>0.75$  mm between the luminal diameters measured by IVUS and QCA (Difference  $>0.75$  mm in the left main artery, LAD, left circumflex and RCA were 55.8%, 21.7%, 30.8%, and 15.4% respectively). Conclusion: Coronary lesions were underestimated by QCA in comparison to IVUS regarding luminal diameter, especially the left main.

### **BIOGRAPHY**

Ahmed Elsayed has completed my M.Sc. of cardiology at the age of 29 years from Benha University, Egypt. I am a cardiology specialist at National Heart Institute, Egypt. I was co-author in some papers. Also, I was collaborator in global surge II.



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