

**Gender Related Atherosclerosis Patterns in STEMI Patients Undergoing Angiography**  
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**Aim:** Gender related coronary disease outcome disparities are poorly understood. We hypothesized that gender induces different pattern of atherosclerosis, which in turn may lead to outcome disparities.

**Methods:** The coronary angiography of a cohort of 100 match-controlled ST-elevation myocardial infarction (STEMI) patients (50 men+50 women) was blindly and independently analyzed by 3 cardiologists. We have calculated the atherosclerotic burden of each lesion as the square root of (reference diameter (mm)\*% narrowing\*length (mm)). The lesions were summed to a personal "atherosclerotic burden" (ASB). We analyzed ASB for subcategories- proximal/distal lesions and specific coronary artery. A student t-test was utilized for comparison between the ASB's of men versus women.

**Results:** The average age for men and women was 64.42±12.90 and 65.78±12.90 respectively (p=0.6). The two groups baseline characteristics were well balanced in terms of demographics and risk factors except for a lower body surface area in women (1.92±0.14 vs. 1.75±0.15;p<0.001). Compared with men (Table-1), women had a significantly lower ASB. As opposed to women, men had significant ASB in proximal segments and segments involving the LAD and LCX. Multivariate analysis have demonstrate that in women, the addition of each risk factor adds 0.685 to the ASB (p<0.05).

**Conclusion:** This study demonstrates a significant difference in both the total atherosclerotic burden and distribution of atherosclerosis between men and women undergoing coronary angiography for STEMI which intuitively should translate to a more favorable outcome. As opposed to men, multiple risk factors are associated with higher ASB. The low total ASB in women, together with low incidence of ASB in the proximal and left system may indicate either increased vulnerability of atherosclerosis in women or the existence of eccentric/non-epicedial disease which may cause the actual less favorable outcome.

Table-1 Angiographic patterns disparities

Angiographic Data	Women	Men	p
Total ASB±SD	10.27±3.44	12.06±3.44	<0.05
ASB in LMA	2.55±1.55	3.3±1.15	0.246
ASB in LAD	7.02±2.56	8.38±2.51	<0.05
ASB in LCX	3.16±2.75	4.61±2.79	<0.05
ASB in RCA	5.45±3.67	5.9±3.72	0.531
Proximal ASB	5.22±2.92	7.10±2.92	<0.05
Distal ASB	8.14±3.92	9.26±3.57	0.138