

## Sex Differences in Risk Factor Profile and Presentation Characteristics of Premature Acute Myocardial Infarction

Shadi Akhtari, Stella S. Daskalopoulou, Robert-James Doonan\*, Louise Pilote, for the Genesis (Gender and Sex Determinants of Cardiovascular Disease) Investigators

**Background:** In the current literature, there is a large area of uncertainty with respect to risk factors and presentation characteristics of premature acute myocardial infarction (AMI) and their interactions with sex.

**Objectives:** The goal of our study was to identify the risk factor profile and selected presentation characteristics of women and men with AMI at 50 years of age or less.

**Methods:** Chart review was performed on 215 patients younger than 50 years of age, who were admitted to the Coronary Care Unit at the Montreal General Hospital or the Royal Victoria Hospital, between April 2000 and August 2006 with a diagnosis of AMI. Analyses were performed to determine sex differences in risk factors, and clinical presentation of premature AMI.

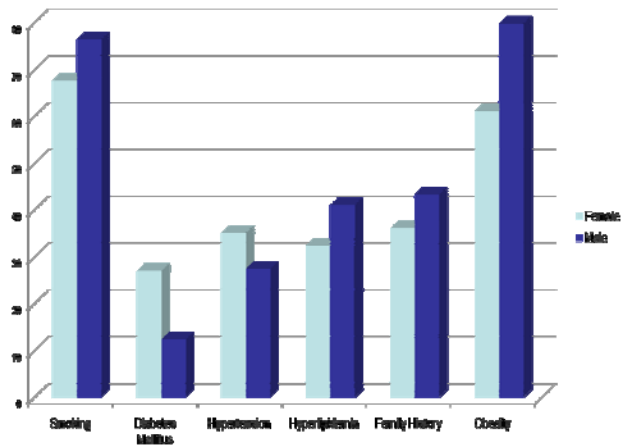
**Results:** Diabetes Mellitus was twice as prevalent in women than men with premature AMI. Most prevalent risk factors were smoking and obesity (Table 1, Figure 1). No significant differences were observed in other classical cardiac risk factors (Table 1, Figure 2). The majority of young women and men presented with classical symptoms. Men showed a trend toward a higher proportion of ST segment elevation AMI. Prevalence of 3-vessel disease was not significantly different in women vs. men.

**Conclusions:** Contrary to typical notion, both women and men commonly present with typical symptoms of AMI. Classical cardiac risk factors are common in young women and men with premature AMI. Efforts to combat modifiable risk factors should be enhanced.

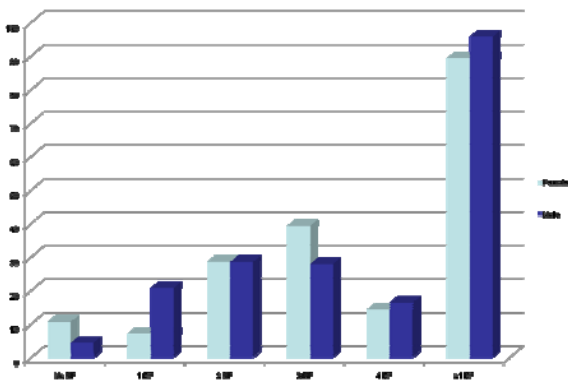
**Table 1.** Basic Characteristics of 215 Patients

	Female	Male	P-Value
Sex (number, %)	37 (17.2)	178 (82.8)	
Mean Age (yrs)	43	44	0.43
Race (white, First Nation) (%)	75.7, 16.2	68.5, 6.18	
BMI $\geq$ 25 (%)	61.1	79.8	0.029
History of Smoking (%)	67.6	76.4	0.22
Diabetes Mellitus (%)	27.0	12.4	0.038
Hypertension (%)	35.1	27.5	0.42
Hyperlipidemia (%)	32.4	41.0	0.36
Mean Total Cholesterol (mmol/L)	5.13	5.29	0.51
Mean Low-Density Lipoprotein (mmol/L)	2.9	3.2	0.25
Mean Triglyceride (mmol/L)	2.12	2.16	0.87
Presence $\geq$ 1 'Classical' Risk Factor	89.3	95.7	0.17
History of Cocaine Use	2.7	9.5	
'Classical' Symptoms (%)	92	93	0.96
Maximum Troponin ( $\mu$ g/L)	10.8	12.0	0.68
ST Segment Elevation Myocardial Infarction (%)	45.9	62.9	0.066
Percent of Patients who Underwent Angiography (%)	94.5	91.4	0.74
Prevalence of 3-Vessel Disease on Angiography (%)	20.0	31.4	0.21

**Figure 1.** Prevalence of Classical Cardiac Risk Factors in Young Women vs Men



**Figure 2.** Distribution of Number of Classic Cardiac Risk Factors in Young Women vs Men



**Author Affiliations:** Department of Medicine, McGill University Health Centre, McGill University, Montreal, Quebec

**Conflicts of Interest:** None.