No modifiable and modificable Risk Factors for coronary artery disease/myocardial infarction (MI)

Dr. Andrés R. Pérez Riera

I) No modifiable Risk Factors for coronary artery disease (CAD)

1. *Sex:* males tend to have myocardial infarction earlier in life
2. *Age*
3. *Family history/genetics:* there is an increased risk of myocardial infarction (MI) if a first-degree relative has a history of cardiovascular events before the age of 50). *(**Anand SS, et al., INTERHEART Investigators. Risk factors for myocardial infarction in women and men: insights from the INTERHEART study. Eur Heart J. 2008 Apr;29(7):932-40**.) (**Nielsen M, et al. Familial clustering of myocardial infarction in first-degree relatives: a nationwide study. Eur Heart J. 2013 Apr; 34(16):1198-203**.)*.

The role of genetic loci that increase the risk for MI is under active investigation. *(**Samani NJ, et al., BHF Family Heart Study Research Group. A genomewide linkage study of 1,933 families affected by premature coronary artery disease: The British Heart Foundation (BHF) Family Heart Study.** **Am J Hum Genet. 2005 Dec;77(6):1011-20**.) (**Wang Q, et al. Premature myocardial infarction novel susceptibility locus on chromosome 1P34-36 identified by genomewide linkage analysis.** **Am J Hum Genet. 2004 Feb;74(2):262-71**.)*

4. *Male pattern baldness:* If the hair loss begins at the temples or the crown of the head, the patient may have male pattern baldness. Some men will get a single bald spot. Others experience their hairlines receding to form an "M" shape. In some men, the hairline will continue to recede until all or most of the hair is gone.

II. Modifiable Risk Factors for coronary artery disease (CAD)

1. *Smoking*
2. *Alcohol consumption* (weaker association, protective. The protective effect of exercise and alcohol was also found to be higher in women. *(**Yusuf S, et al, INTERHEART Study Investigators. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study.** **Lancet. 2004 Sep 11-17;364(9438):937-52**)*
3. *Dyslipidemia:* Abnormal lipid profile/blood apolipoprotein (raised ApoB/ApoA1): strongest association with acute myocardial infarction.
4. *Diabetes mellitus:* higher in women

5. *Hypertension:* higher in women,
6. *Centripetal obesity: (Panza)* Abdominal obesity (waist/hip ratio) (greater than 0.90 for males and greater than 0.85 for females)
7. *Sedentary lifestyle*
8. *Poor oral hygiene*
9. *Presence of peripheral vascular disease*
10. *Psychosocial factors* such as depression, loss of the locus of control, global stress, financial stress, and life events including marital separation, job loss, and family conflicts
11. *Lack of daily consumption of fruits or vegetables*
12. *Elevated levels of homocysteine:* a moderately high level of plasma homocysteine, is an independent risk factor of MI. Elevated plasma homocysteine is potentially modifiable and can be treated with folic acid, vitamin B6, and vitamin B12. *(**Stampfer MJ, et al. A prospective study of plasma homocyst(e)ine and risk of myocardial infarction in US physicians. JAMA. 1992 Aug 19;268(7):877-81**.)*

III. Other Causes of MI

1. *Trauma*
2. *Vasculitis*
3. *Drug use (cocaine)*
4. *Coronary artery anomalies*
5. *Coronary artery emboli*

6. *Aortic dissection*
7. *Excess demand on the heart (hyperthyroidism, anemia)*
8. ***Secondary to COVID-19 infection*** *(**Kathleen M. Capaccione,⁎ Jay S. Leb, Belinda D'souza, Pallavi Utukuri, and Mary M. Salvatore. Acute myocardial infarction secondary to COVID-19 Clin Imaging. 2021 Apr; 72: 178–182.doi: 10.1016/j.clinimag.2020.11.03**)*