Editorial

Gender Differences in South Indians with Premature Coronary Artery Disease

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The idea of gender differences emerged in the mid-1990s. Until then, angina pectoris was considered as benign problem in women, because of myth propagated by the findings of the landmark Framingham Heart Study (FHS),[1] which fostered the widespread perception that women tolerate angina better. As a result, the clinicians paid less attention to women presenting with angina and hardly made any effort to either prevent coronary artery disease (CAD) or treat it in time in women!

Gender bias has been noted in Indian women from data at Jayadeva Institute's Myocardial Information studies (JIMI-I, II, III) and was presented at the 1st international symposium of South Asian Society of Atherosclerosis and Thrombosis (SASAT), Bombay, 1995,[2] and later a chapter[3] titled "Coronary Artery Disease in Indian Women: Change the Gender Bias" also confirmed gender bias in coronary heart disease in Indian women. The incidence of CAD in India had increased from 1.05% in 1960 to 9.67% in 1995, with men below 40 years and women below 50 years experiencing the greatest rise. Cardiovascular deaths in India are estimated to be 2.5 million per year. WHO predicted that incidence of CAD in women will be doubled by the year 2020. Now, in 2021, CAD is the leading cause of death both in men and women. It has already reached an epidemic proportion among Indians.[4]

In the Global Registry of Acute Coronary Events study, the prevalence of young acute coronary syndrome (ACS) was 6.3%; in the Thai ACS registry, it was 5.8%; in the Spain registry, it was 7%.[5–7] In a study in south Indians by Iragavarapu et al, it was 10.4%.[8] In this study, the prevalence of young ACS is 16%. Is this the warning signal for young? CAD accounts for higher death rate in women, regardless of their race or ethnicity. Raised triglyceride (TG) level is a strong predictor of CAD in women compared with men. A meta-analysis of population-based prospective studies has shown in the past that an increase in TG level of 90 mg/dl increases the CAD risk by 75% in women and 30% in men.[9] But in this study, total cholesterol (TC) in males was 173.9 ± 49.93 and in females was 172.44 ± 64.78, and the mean triglycerides in males was 172.11 ± 107.3 and in females was 179.22 ± 125.88, which means that although both mean TC and TG are slightly more, they are statistically insignificant. In a meta-analysis of 37 prospective cohort studies, the risk of fatal CAD is 50% higher in women with diabetes compared with male diabetics.[10]

In this issue, the article entitled Gender differences in South Indians with premature coronary artery disease by Laxmi Hanumanthayya Shetty et al is published.

In this study, the higher prevalence of hypertension, diabetes, and dyslipidemia is noted in women. Diabetes in females was 35.4%, whereas only 11.5% males were diabetics, which is statistically significant ($p < 0.001$). This shows that the women with diabetes must be targeted in time to prevent CAD in future. In this study, only 15.9% of females had a normal body mass index (BMI), and a whopping 69.5% were overweight and 14.6% were clearly obese. In contrast, 52.6% males had normal BMI, 37% were overweight, 8.9% were obese. This clearly illustrates that young women are not concerned about being overweight! This could be an indication to warn women against being overweight and shun lethargic life; instead, take to regular exercises and lead an active life.

The INTERHEART study revealed that the first presentation of CAD in women is approximately 10 years later than men, most commonly after menopause.[11] But the bubble of hormonal protection in young women seems to have burst, as there is not much age difference between men and women in this study, which showed the mean age of females was

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35.4 ± 4.68 years. The youngest female was 25 years. The mean age of males was 34.2 ± 4.25 years. The youngest male was 19 years. Probably, hormonal protection is offset by the stress and strain of urban life and other conventional risk factors.

The European Society of Cardiology[12] developed the first international position article on myocardial infarction in the absence of obstructive coronary artery disease (MINOCA) and stated women presenting with acute myocardial infarction (AMI) are more than twice as likely as men to have MINOCA. But surprisingly in this study, MINOCA was seen in 7.4% females and either recanalized vessels or nonobstructive CAD in 178 (18.1%) males, which means MINOCA is more than twice in males. Previous studies have shown presence of gender bias in less number of women getting proper treatment. But in this study, there was no significant difference in treating the patients with percutaneous intervention and stenting as 21% females and 25.7% of males underwent PTCA with stenting.

The gender differences in south Indians with premature CAD (< 40 years)—Insights from the PCAD registry is an eye-opener. This is a very important study which rings the warning bells in time to young women, so that preventive strategies are prepared to prevent premature CAD in young women and save the precious lives from untimely demise and misery to family in general and children in particular. We must develop guidelines, start awareness program from schools and colleges, and educate about preventive strategies and timely interventions to avoid pandemic of CAD in women.

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