



Cardiovascular Problems in Menopause

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Menopause , Coronary heart disease , LDL cholesterol , Hypertension , Heart failure , Lifestyle modification

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ABSTRACT *The prevention & management of cardiovascular disease in women begins with awareness about the problem, which has been dishearteningly low even among women living in developed nations. The metabolic & hormonal changes, which start around menopause ultimately manifest with detrimental outcomes for both cardiac & vascular systems. Hypertension, dyslipidemia, metabolic syndrome, heart failure & coronary artery disease bear the brunt of the attack profile. Proper lifestyle modification along with judicious use of drugs is advocated as a possible solution to this growing menace.*

Women (XX) & Men (XY) differ in their genetic complement by a single chromosome of the 46 that define the human species. The influence of this single chromosomal difference affects the mechanism and expression of disease which may protect from or enhance susceptibility to cardiovascular problems. Approximately 4,55,000 deaths occurred annually due to cardiovascular disease among women in U.S.A. , causing death of 1 in 3 women which amounts to more death from heart disease than from breast cancer, stroke & lung cancer put together and making it the leading cause of death among women. The Indian data might not be so frightening, but as our population starts to age and behavioural pattern tends to change, we are likely to face a similar scenario in most of our urban pockets. Prevention & management of cardiovascular disease in women begin with the awareness about the problem. In a landmark study, only 71.2% of surveyed internists & O&G specialists responded correctly to all 13 questions assessing knowledge about female specific cardiac risk factors¹.

MENOPAUSE & CORONARY HEART DISEASE :

A wide range of factors may explain the increased risk of CHD (Coronary heart disease) after menopause.

These include

Increase in LDL cholesterol.

Decrease in HDL cholesterol.

Increase in glucose intolerance.

Adverse changes in haemostatic & vascular function.

These fundamental metabolic changes in the internal milieu have long been attributed to the decline in endogenous estrogen that accompanies menopause. It has been established by statistical data that the first presentation with CHD occurs approximately 10 years later among women than among men and most commonly after menopause. Mortality from CHD is increasing steadily among women than men in both developed & developing countries.

CONTRADICTORY MESSAGES FROM THE TRIALS :

Considerable evidence from earlier observational stud-

ies had suggested that the use of post menopausal HRT (Hormone Replacement Therapy) reduces the risk of CHD. The basis of this concept was laid upon the physiological effects of exogenous estrogen supplement consistent with cardio-protective mechanisms. It reduces LDL, increases HDL, reduces Lp(a), PAI-1 (plasminogen activator inhibitor- 1) & insulin levels, inhibit oxidation of LDL & improve endothelial function. But its effect on inflammation is complex because while decreasing fibrinogen level, it increases CRP level ; both being CAD risk markers. Despite observational & physiological data suggesting benefit of HRT, data from at least 7 randomized trials (5 secondary prevention & 2 primary prevention) not only failed to support a possible benefit of HRT on CHD, but indicated that combined oestrogen & progesterone may actually increase CHD risk². Emerging evidence indicates that age & time since menopause may also modulate the effect of estrogen on cardiovascular risk. The first secondary prevention trial, the Heart & Estrogen/Progestin Replacement study (HERS) found no cardiovascular benefit of supplementation even with extended follow up. The large scale Women's Health Initiative (WHI) trial evaluated the relative benefit & risk of oestrogen plus progestin among 16,600 post-menopausal women of 50-79 years age with an intact uterus at baseline during a planned 8.5 years period. However the trial was prematurely terminated due to increased risk of breast cancer & excess cardiovascular events. Addressing all these concerns the North American Menopause Society & American Heart Association on their joint position statement no longer recommend HRT as an approach to prevent CHD. Further more, FDA revised the labeling for all post menopausal HRT containing estrogen alone or estrogen plus progestin to include a boxed warning that highlights the increased risk for heart disease, MI ,Stroke & breast cancer².

METABOLIC SYNDROME & DIABETES , IN RELATION TO MENOPAUSE :

It is crucially important for all of us to be aware that diabetes is no more considered as a risk factor for CHD, but a "CHD equivalent" – since National Cholesterol Education Programme -Adult treatment Panel (NCEP-ATP III) guidelines of 2001³. Metabolic syndrome relates closely to insulin resistance and comprises a constellation of at least three of the following risk factors : Abdominal obesity, high triglycerides, low HDL cholesterol, blood pressure of 130/85

or higher & fasting glucose concentration of 110 mg/dl or greater. The prevalence of all these incriminating risk factors for cardiovascular problems tend to increase substantially in the post-menopausal women all across the globe. Abdominal obesity being considered as a harbinger of atherogenic risk factors, have been found to be significantly higher in Indian women as compared to westerners; more so in the post-menopausal age group³. Creating a consciousness among all gynecologists about these risk factors is the need of the hour.

HYPERTENSION :

The prevalence of hypertension increases with age in both sexes, but from 45 to 54 years of age, the escalation was greater among women than men; the difference in prevalence reaching statistical significance at 75 years of age & older (15% higher risk). This clearly shows the trend of more & more women being afflicted by hypertension with time, once menopause sets in. Unfortunately, women remain one of the population most likely to be under-treated when they have an established diagnosis of hypertension and even more concerning, little progress has been made in improving rates of treatment & control during the past decade even in nations like U.S.A. The increase in treatment & control rates of hypertension in NHANE surveys from 1988 to 2000 scores the figures at 9.8% & 15.3% for men vs 1.9% & 0.5% in women respectively³.

This should alert all of us to the magnitude of the problem in India where the access to health facility for women continues to be abysmally poor.

DYSLIPIDEMIA :

Adverse changes in lipid profiles & the relative risk of coronary disease events following menopause has been highlighted in Nurses Health Study(NHS) & many other population surveys⁴. Perimenopausal triglyceride levels are the most erratic but follow roughly the same pattern of increase as total cholesterol & LDL cholesterol, which increase on average by an absolute 10% from levels at 6 months before menopause. HDL concentration declines gradually in the two years preceding menopause & then levels off after menopause. As per NHANES survey, only 10.2% of dyslipidemic women were under treatment and of them only 3.7% achieved normal levels with treatment in U.S.A⁴. The state of affairs in Indian women considering the very low level of awareness is imaginable.

HEART FAILURE :

The lifetime risk for development of heart failure among women & men at the age of 40 years is greater in women (1 in 6) than among men (1 in 9)⁵. Recent data from U.S.A suggest that women accounted for 57% of heart failure deaths and HF continues to complicate acute MI more frequently in women than in men. The underlying pathophysiologic process of heart failure is different in women. Post menopausal women have higher prevalence of heart failure with preserved ventricular function (diastolic heart failure) than HF with reduced ventricular function (systolic HF). Earlier concept that diastolic HF is more benign than systolic

HF has been proven wrong from ADHERE registry, OPTIMIZE-HF & EHFS databases. Use of drugs require careful consideration in these subset of patients; with increased frequency of cough with ACE inhibitors & cautious digoxin dosing with diminished renal function⁵. Alcohol may actually be more toxic to the myocardium in women, with a lower total dose required to produce cardiomyopathy.

LIFESTYLE RISK FACTORS :

The statistics from many western countries about the level of physical inactivity & prevalence of obesity in menopausal women is horrifying and there is a similar trend in many urban areas of India. Surveys have found that 6.3% of women in this age group have never engaged in vigorous physical activity in last 1 year and only 2.5% older than 50 years met recommendations for at least 30 minutes of moderate to vigorous physical activity at least 5 days per week. As a result, the prevalence of obesity (BMI > 30kg/m²) in women above the age of 50 years in U.S.A. has steadily increased from 20.8% to 35.3% in the span of last decade. Similar trends in menopausal women in urban India is perhaps more concerning for the future heart disease in this subset of population.

CONCLUSION :

Awareness about the possible cardiovascular problems in menopause amongst gynecologists & physicians is the cornerstone for any effective strategy for diagnosis, treatment & prevention of these disorders. As the average life expectancy of Indian women continues to rise, the population of menopausal women will continue to increase in our society. Consequently the number of women living with coronary heart disease, hypertension, heart failure & most of other co-morbidities will gradually swell. This realization will ultimately highlight the need for a stronger commitment from all concerned health care givers to this special group of our population.

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