



METABOLIC SYNDROME IN PREMENOPAUSAL AND POSTMENOPAUSAL WOMEN: A PROSPECTIVE STUDY.

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ABSTRACT

Metabolic syndrome (MS) is a cluster of conditions that occur together, increasing risk of heart disease, stroke and Type 2 diabetes mellitus (DM). It is also called as syndrome X and insulin resistance syndrome. MS is closely linked to overweight, obesity or inactivity. This study was conducted in Shri Balaji Institute of Medical Science, Raipur, in the Department of Obstetrics and Gynaecology, from March 2021 to March 2022. The incidence, association with different factors like duration of menopause, occupation were determined. Results were tabulated and subjected to statistical analysis. We found that out of study group of 100 women, 37% had newly onset MS. The incidence in premenopausal women was 16% and postmenopausal women was 28%. The incidence of MS was 37% in our study whereas Mehndrita et al (1) found it to be 29% overall, 16% in premenopausal and 42% in postmenopausal. Hypertension is an important risk factor for cardiovascular disease but when combined with high FBS levels and abdominal obesity, the chance for developing cardiovascular disease is even higher. We found these levels high in 60% cases with associated hypertension. Premenopausal women may be protected against cardiovascular diseases compared with men and women of similar age. The factors contributing to MS and thereby leading to increased risk of developing diabetes, cardiovascular disease need prevention and adequate management strategies.

KEYWORDS : Menopause, Metabolic Syndrome, Postmenopausal Women, Premenopausal Women.

INTRODUCTION

Metabolic syndrome (MS) is a cluster of conditions that occur together, increasing risk of heart disease, stroke, and Type 2 diabetes mellitus (DM). It is also called as syndrome X and insulin resistance syndrome. MS is closely linked to overweight, obesity or inactivity. The incidence of MS in premenopausal women is about 13.8% and postmenopausal women it may be > 60%. Menopausal transition leads to decreased estrogen, which is cardioprotective and antiatherogenic. The decline in the oestrogen /androgen ratio dilutes the vasorelaxant effects of oestrogen on the vessel wall and promotes the production of vasoconstrictive factors such as endothelin, which leads to MS. As sedentary lifestyle and obesity are on rising trend, the incidence of MS is also increasing.

AIMS AND OBJECTIVES

This study was conducted to determine the incidence of MS and its components in premenopausal and postmenopausal women and the association between the MS and menopause.

MATERIAL AND METHODS

This study was conducted in Shri Balaji Institute of Medical Science, Raipur, in the Department of Obstetrics and Gynaecology, from March 2021 to March 2022.

Inclusion Criteria

100 females attending outpatient department in the age group of 45-60 years, peri and postmenopausal were included.

Exclusion Criteria

Women on HRT, secondary hypertension, congenital obesity or undergone bariatric surgery, smokers, alcoholics and having medical disorders like hypothyroidism, Cushing's disease and DM.

Women were considered to have MS if they had three or more of the following criteria:

- A. Central obesity: waist circumference > 80 cms.
- B. Hypertriglyceridemia: serum triglyceride level > 150 mg/dl.
- C. High B.P: SBP > 130mm Hg and or DBP > 85 mm Hg or on treatment for hypertension.
- D. Low HDL cholesterol < 50 mg/dl.
- E. High FBG level > 100 mg/dl or on treatment for DM.

The incidence, association with different factors like duration of menopause, occupation were determined. Results were

tabulated and subjected to statistical analysis.

RESULTS

We found that out of study group of 100 women, 37% had newly onset MS. The incidence in premenopausal women was 16% and postmenopausal women was 28% (Table-1). HDL, Triglyceride and FBS were high in 60% cases while 58% cases had hypertension (Table-2). We found that out of 21 postmenopausal women with MS, 20 had > 5 years duration since menopause (Table-3). Out of 19 postmenopausal women, 14 were housewives (Table-4).

Table-1 Incidence Of MS

| MS | Number of Cases (N=100) | | |
|---------|-------------------------|-----------------|-------|
| | Premenopausal | Post-Menopausal | Total |
| Absent | 34 | 22 | 56 |
| Present | 16 | 28 | 44 |
| Total | 50 | 50 | 100 |

Table-2 Incidence of Complete of MS

| Components | Number of Cases (N=100) | | |
|-----------------------------|-------------------------|-----------------|------------|
| | Premenopausal | Post-Menopausal | Percentage |
| Waist Circumference > 80 cm | 20 | 35 | 55% |
| Hypertension | 15 | 43 | 58% |
| HDL | 16 | 44 | 60% |
| Triglyceride | 18 | 42 | 60% |
| FBS | 22 | 38 | 60% |

Table-3 MS and duration of Menopause

| Years Since Menopause | Number of Cases (N=100) MS | | |
|-----------------------|----------------------------|---------|-------|
| | Absent | Present | Total |
| <5 | 12 | 1 | 13 |
| >5 | 17 | 20 | 37 |
| Total | 29 | 21 | 50 |

Table-4 MS and Occupation

| Group | Number of Cases (N=100) MS | | |
|-----------------|----------------------------|---------|-------|
| | Absent | Present | Total |
| Premenopausal | | | |
| Housewife | 30 | 6 | 36 |
| Professional | 10 | 4 | 14 |
| Total | 40 | 10 | 50 |
| Post-Menopausal | | | |

| | | | |
|--------------|----|----|----|
| Housewife | 11 | 14 | 25 |
| Professional | 20 | 05 | 25 |
| Total | 31 | 19 | 50 |

DISCUSSION

The incidence of MS was 37% in our study whereas Mehndrita et al (1) found it to be 29% overall, 16% in premenopausal and 42% in postmenopausal. We found it to be 16 and 28% respectively which is also in accordance with study by Ahuja et al (2) and Toppo et al (3). Hypertension is an important risk factor for cardiovascular disease but when combined with high FBS levels and abdominal obesity, the chance for developing cardiovascular disease is even higher. We found these levels high in 60% cases with associated hypertension. Premenopausal women may be protected against cardiovascular diseases compared with men and women of similar age (4). FBG levels were found high in 60% of women along with high waist circumference. Raun et al (5) found that waist circumference was high in 57% women, and it was significantly higher in females (89%) as compared to males (47%). Most women with MS have insulin resistance. The body makes insulin to move glucose into cells for use as energy. Obesity makes it difficult for the cells to respond to insulin leading to rise in blood sugar levels, causing type 2 DM.

Age of menopause depends on various factors like hereditary, onset of menarche, number of pregnancies, oral contraceptive use, menstrual cycle length, previous use of ovulation induction drugs, previous surgeries for various gynaecological pathologies and medical disorders like hypothyroidism, tuberculosis, polycystic ovarian syndrome, fatty liver and asthma. Women having early menopause have higher incidence of MS (6).

CONCLUSION

The factors contributing to MS and thereby leading to increased risk of developing diabetes, cardiovascular disease need prevention and adequate management strategies. Hence lifestyle modifications and changes in dietary habits can help to decrease the morbidity and mortality associated with MS.

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