ROLE OF METABOLIC OBESITY AND BODY MASS INDEX IN PATIENTS WITH CORONARY ARTERY DISEASE: HOSPITAL BASED STUDY

BY

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DEPT.OF CARDIOLOGY

KMC, MANIPAL

INTRODUCTION…

- Obesity
- BMI >30 kg/m²
- BMI >25kg/m² (Asians)
- India- 3rd most obese country

Weisell RC. Body mass index as an indicator of obesity. Asia Pac J Clin Nutr 2002;11 (Suppl 8):S681–4.

INTRODUCTION…

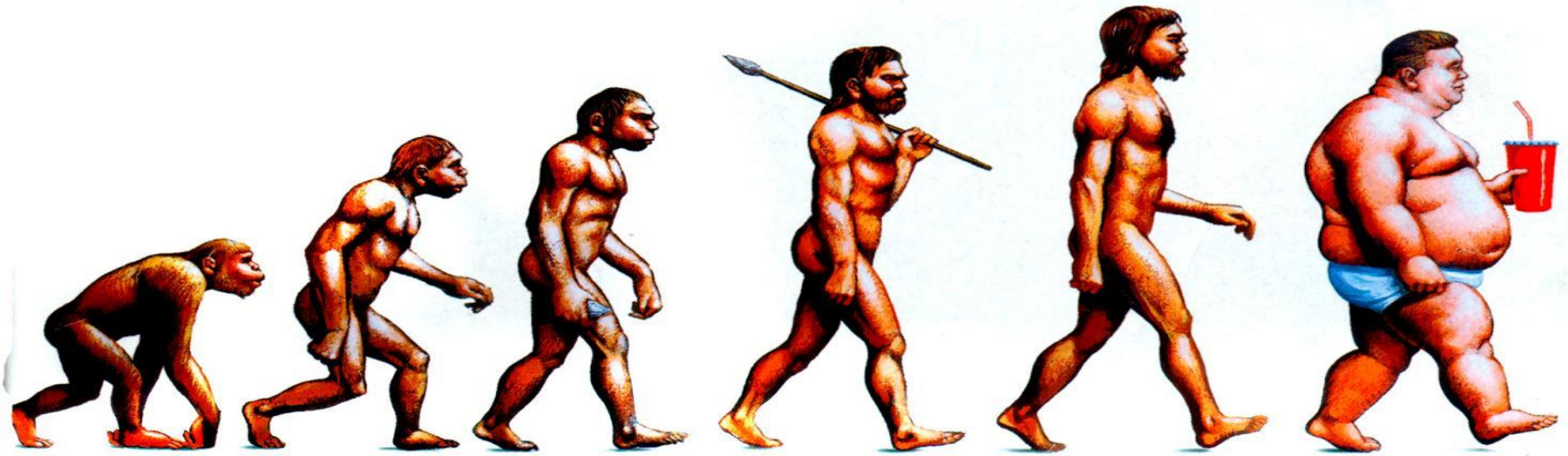
- Metabolic obesity (Insulin resistance syndrome)
- Indian subcontinent is highly predisposed to this condition.
- Prevalence of Insulin resistance syndrome among Indians (≥30%)
- Among females is higher than males (50%).

1.Godsland IF, Stevenson JC. Insulin resistance: syndrome or tendency?Lancet 1995;346:100– 3

Introduction…..

NCEP ATP-III Definition:

3/5 risk factors : Elevated BP, Low HDL, Elevated TG, Impaired fasting glucose, Increased waist circumference.

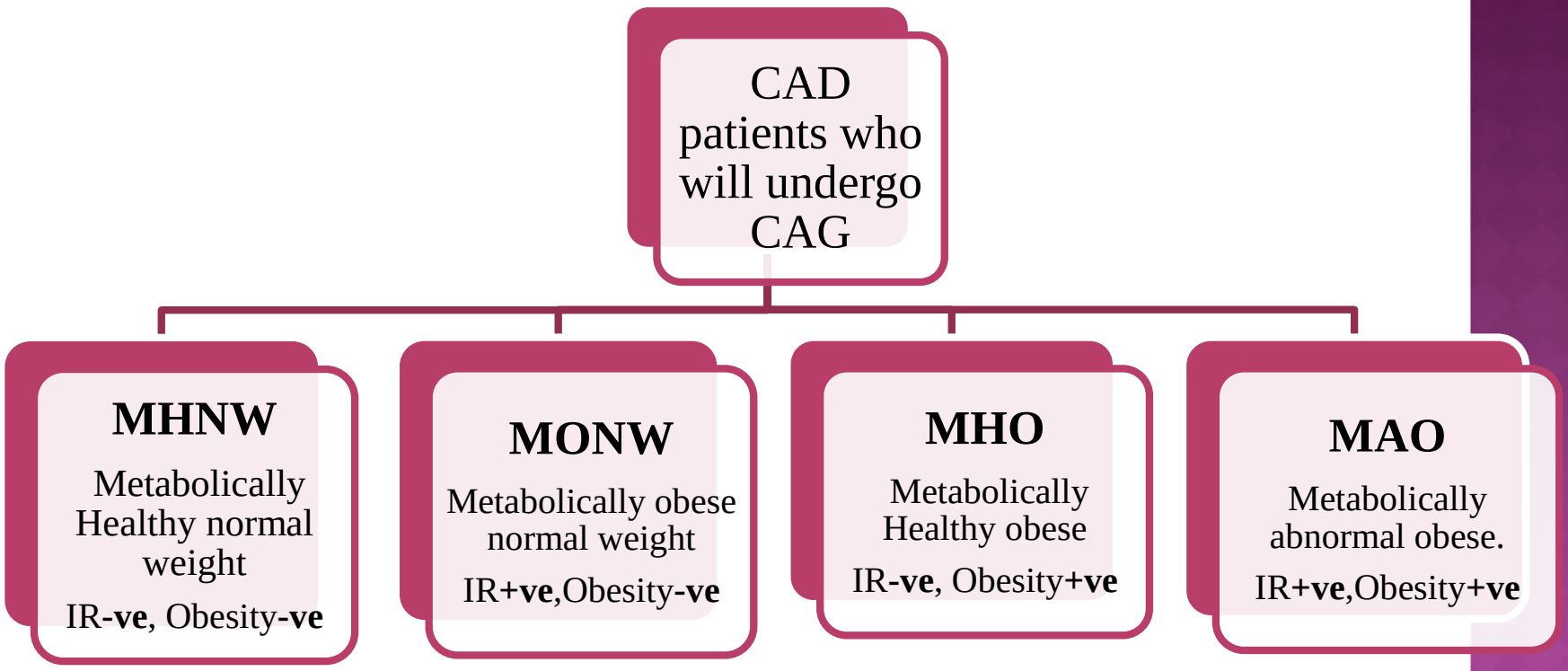


J. I. Cleeman, "Executive summary of the third report of the National Cholesterol Education Program (NCEP) expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (adult treatment panel III)," *Journal of the American Medical Association*, vol. 285, no. 19, pp. 2486–2497, 2001.

CORONARY ARTERY DISEASE:

- Inadequate supply of blood to the myocardium- Atherosclerosis.
- Stable – Manageable with medical or revascularization therapy.
- Coronary Angiogram(CAG) -The traditional gold standard for the diagnosis of coronary atherosclerosis.

PATIENTS



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IMPORTANCE OF RESEARCH:

- There are no study done in India in relation to importance of metabolic obesity and BMI status with severity of Coronary artery disease.
- Helpful to find how the Insulin resistance, hsCRP and Lp(a) is associated with the severity of Coronary artery disease.
- Effect of Lifestyle modification on Body Mass Index and Waist Circumference in post angioplasty patients.

OBJECTIVES

- To study the severity of Coronary Artery Disease among these four groups.

  a) Metabolically healthy normal weight.

  b) Metabolically obese normal weight.

  c) Metabolically healthy obese.

  d) Metabolically abnormal obese.

- To compare the association of Insulin resistance & hsCRP with severity of angiographic Coronary artery disease among four groups.

RESEARCH METHODOLOGY:

Ethical Clearance:

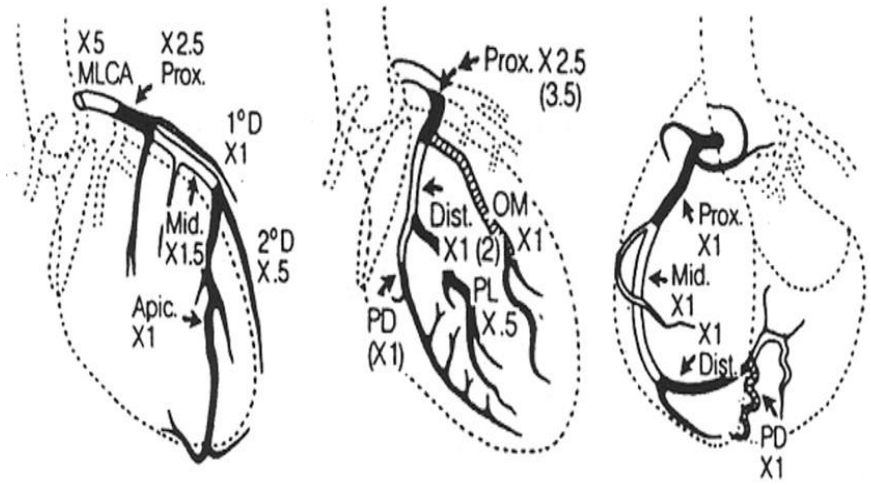
This study is approved by Institutional Ethics Committee (IEC 644/2015) of Kasturba Medical College & Hospital, Manipal.

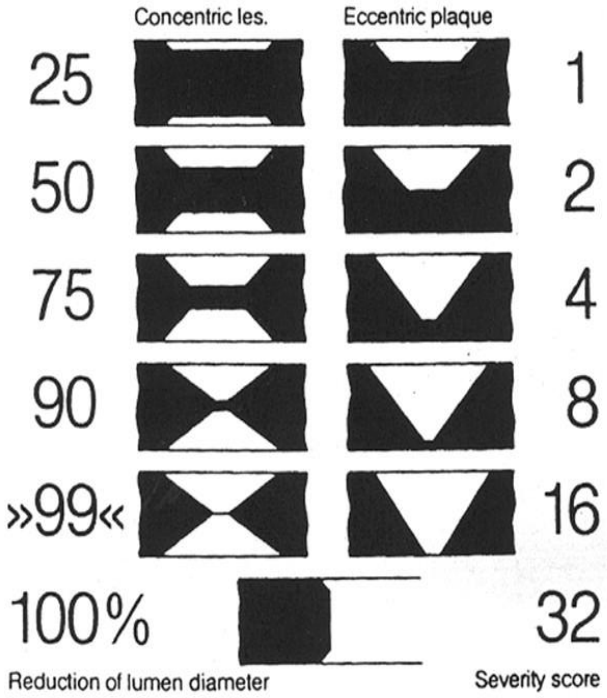
GENSINI SCORING

- Its a scoring system for determining the severity of coronary heart disease.
- It provides an accurate stratification of patients according to the functional significance of their disease.
- Provides an opportunity to match patients with similar degrees of coronary artery disease who are receiving different forms of treatment.

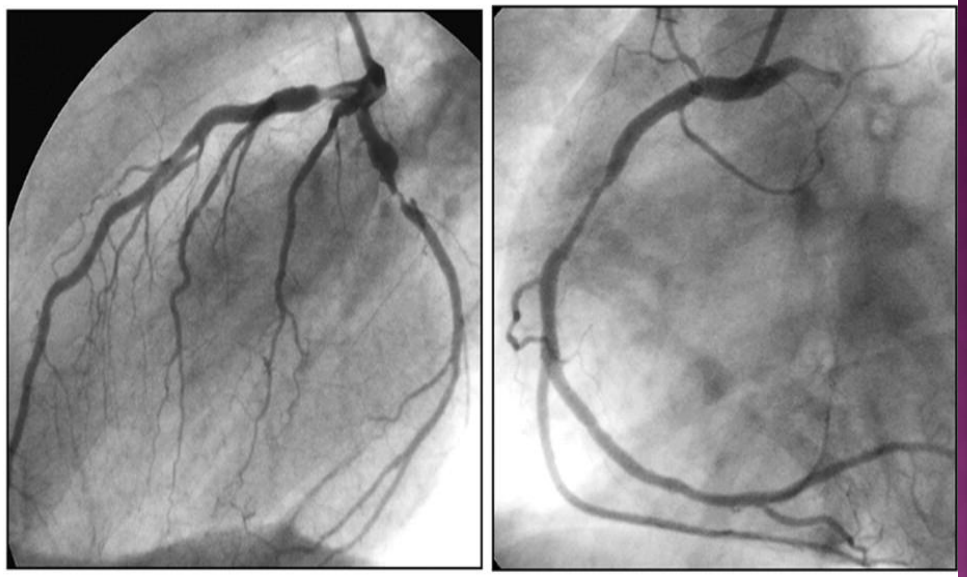
Gensini G G **A more meaningful scoring system for determining the severity of coronary heart disease.** Am J Card1983 Feb;51(3):606.

MLCA/LAD CFx RCA





Example: Patient no. 28 (3-VD)



Left CA Right CA

LAD: 75% concentric (4), proximal (2.5).

Score: 4 x 2.5 = 10

LCx: 90% eccentric (8), proximal (2.5).

Score: 8 x 2.5 = 20

RCA: 75% eccentric (4), middle (1).

Score: 4 x 1 = 4

Final Gensini score: 10 + 20 + 4 = 34

PROTOCOL:

Recruiting CAD patients who will undergo
Coronary Angiogram

Data collection–Anthropometric parameters and Clinical details
Classification of patients into 4 groups

Assessment of Coronary Angiogram and Scoring
GENSINI & SYNTAX
Life style modification

Data Analysis

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PILOT STUDY

- Recruited 100 CAD patients who underwent Coronary Angiogram.
- All patients anthropometric and clinical data were collected.
- Patients were classified into 4 groups according to metabolic and weight status.
- Number of vessels involved in each group is analysed by using angiogram reports.

प्रज्ञान ब्रह्म

Manipal

INSPIRED BY LIFE

Thank you!

Asian Indian Phenotype- Metabolic Syndrome (MS)

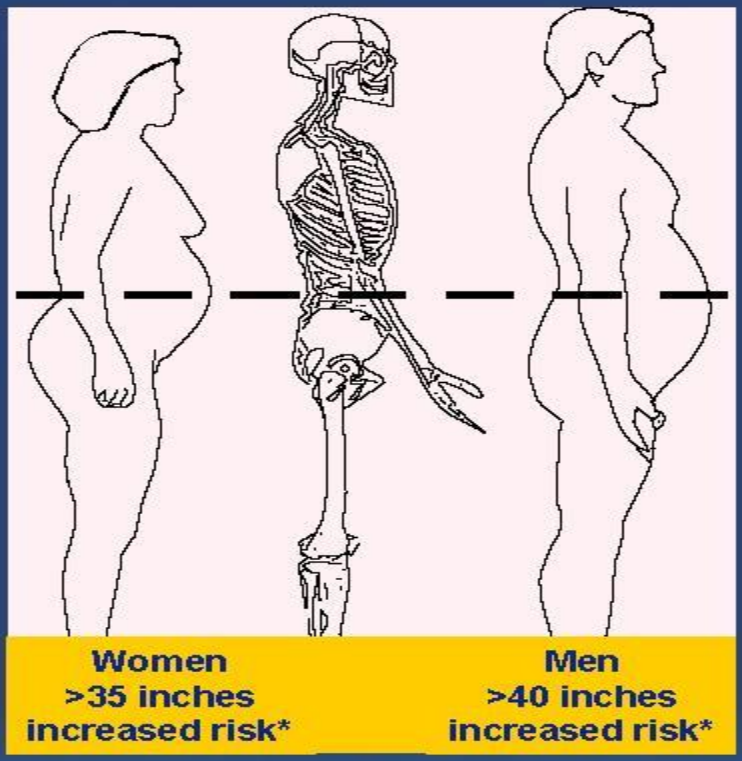
- Metabolic syndrome – increases risk of cardiovascular disease by 2 fold
- Most south asians (Indians) – MONW (Metabolically obese, normal weight) individuals
- Prevalence of MS among Indians – (≥ 30%)*
  - Prevalence among females higher than in males (by 50%)
  - More than europeans, similar to american whites
- Cardiovascular disease risk due to MS
  - Hazards ratio of 2.1 among south asians which is higher than that seen among europeans (HR of 1.6)

*Chow CK, Naidu S, Raju K, Raju R, Joshi R, Sullivan D, et al. Significant lipid, adiposity and metabolic abnormalities amongst 4535 Indians from a developing region of rural Andhra Pradesh. Atherosclerosis. 2008 Feb;196(2):943–52.

Cardiometabolic Risk

How to Measure Waist Circumference

- Locate upper hip bone and top of right iliac crest
- Place measuring tape in horizontal plane around abdomen at iliac crest
- Ensure tape is snug, but does not compress the skin
- Tape should be parallel to floor
- Record measurement at the end of a normal expiration



*Ethnic/age-related differences in body fat distribution may affect validity of waist circumference as surrogate for abdominal fat

NIH, NHLBI, NHLBI Obesity Education Initiative, NAASO. NIH Publication Number 00-4084. October 2000.
Misra A, et al. *Nutrition*. 2005;21:969-976.

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