

Study showing the correlation between Obesity and Metabolic disorders in PCOS patients

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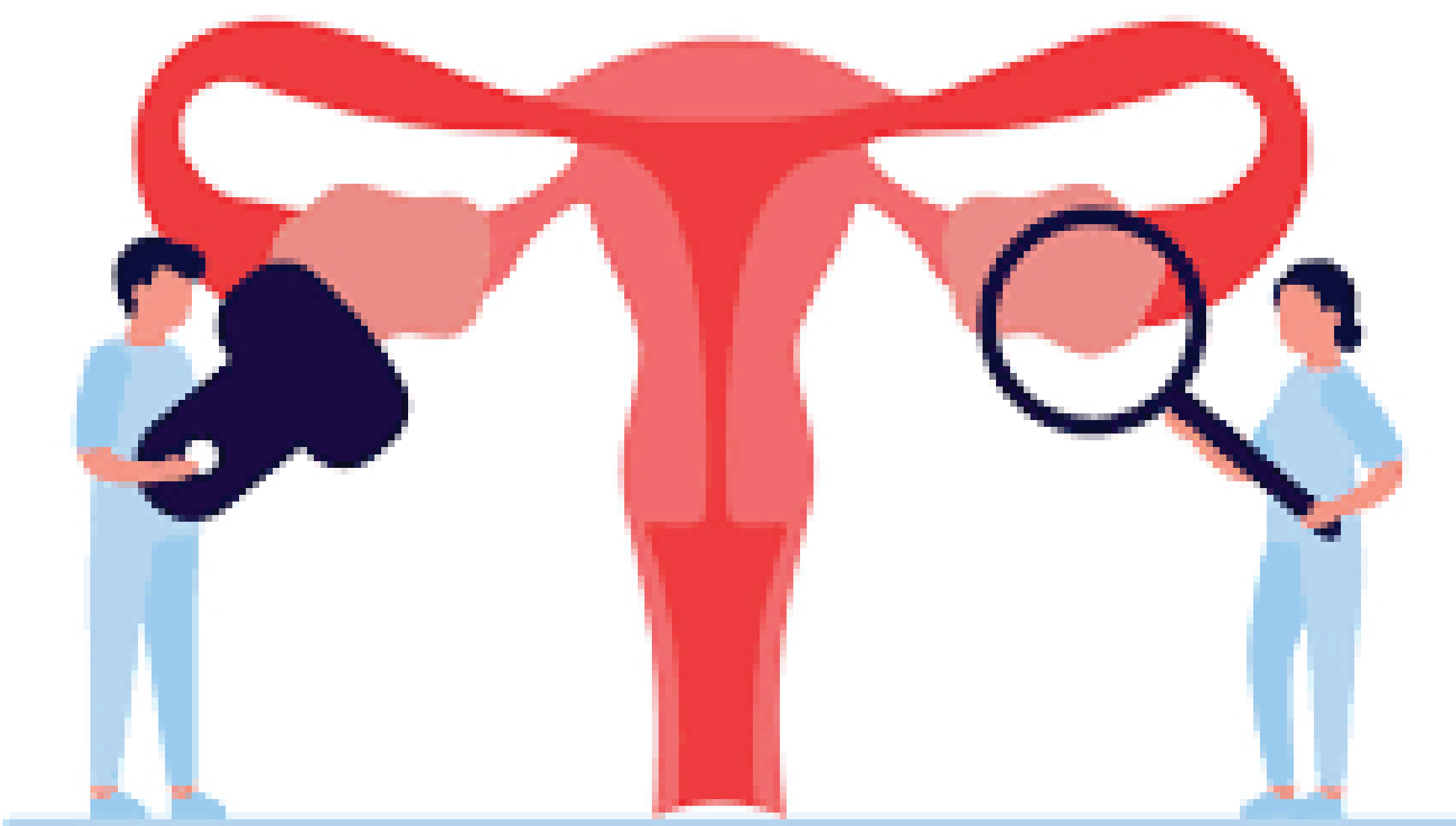
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INTRODUCTIONS

- Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder affecting 5–10% of women in reproductive age group.
- It is characterized by hyperandrogenism, menstrual irregularities, obesity, and insulin resistance.
- PCOS is also frequently associated with metabolic disturbances such as insulin resistance, dyslipidemia, and metabolic syndrome.
- In this study, we study the association between BMI and various metabolic and endocrinological parameters.

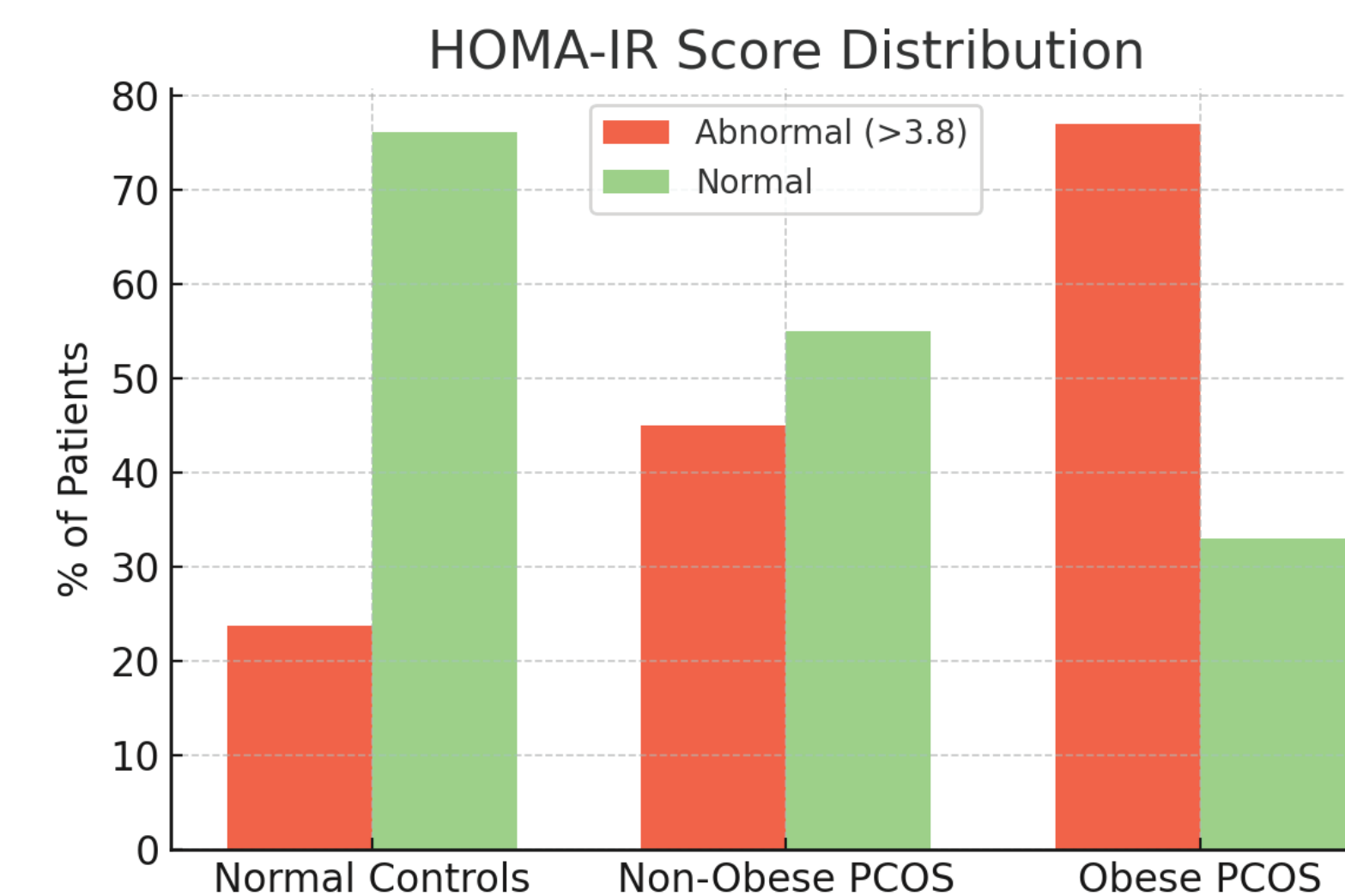
AIM

- To study the correlation of *BMI with Insulin resistance* in PCOS patients
- To study the correlation of *BMI with metabolic parameters* in PCOS patients
- To determine the significance of *association between BMI and metabolic parameters including insulin resistance*.

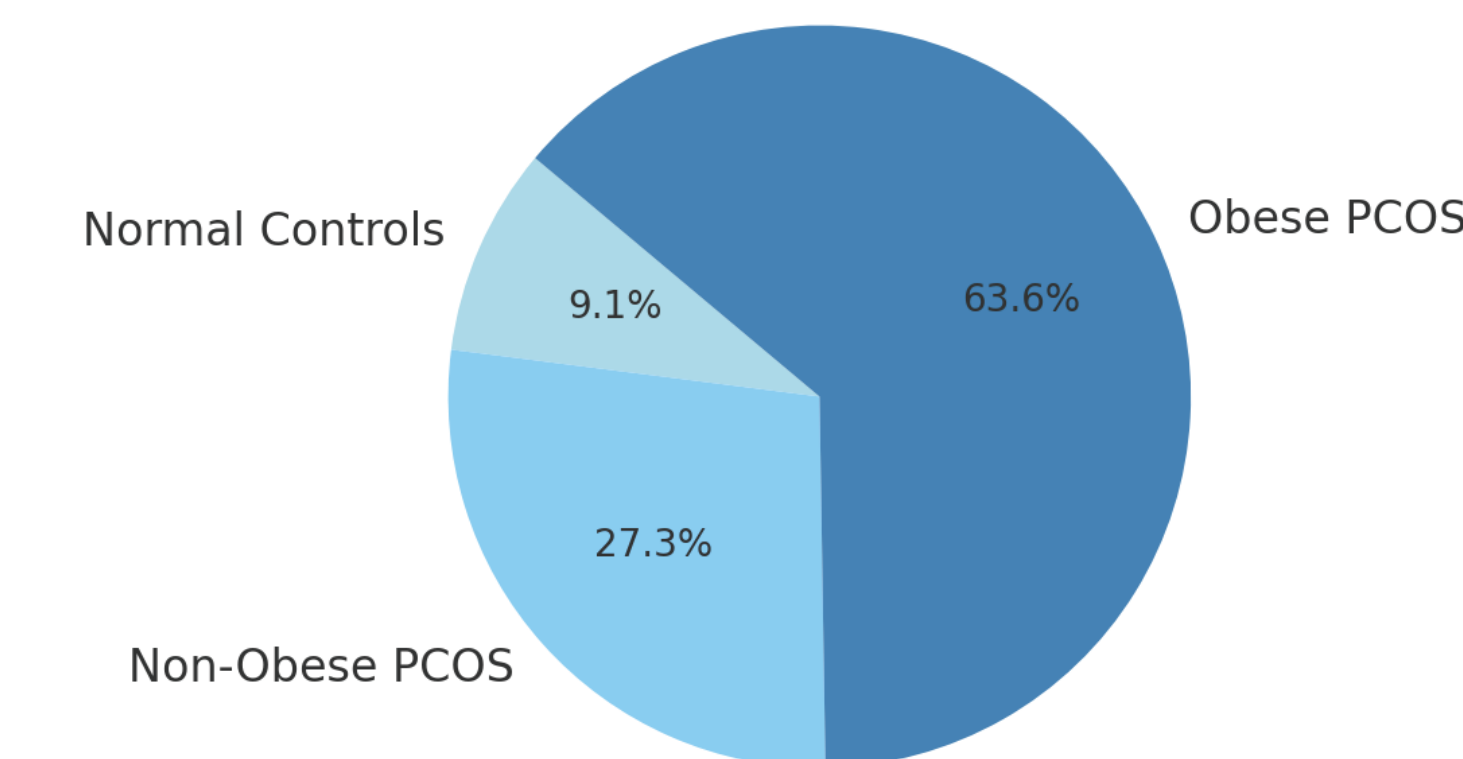


METHODOLOGY

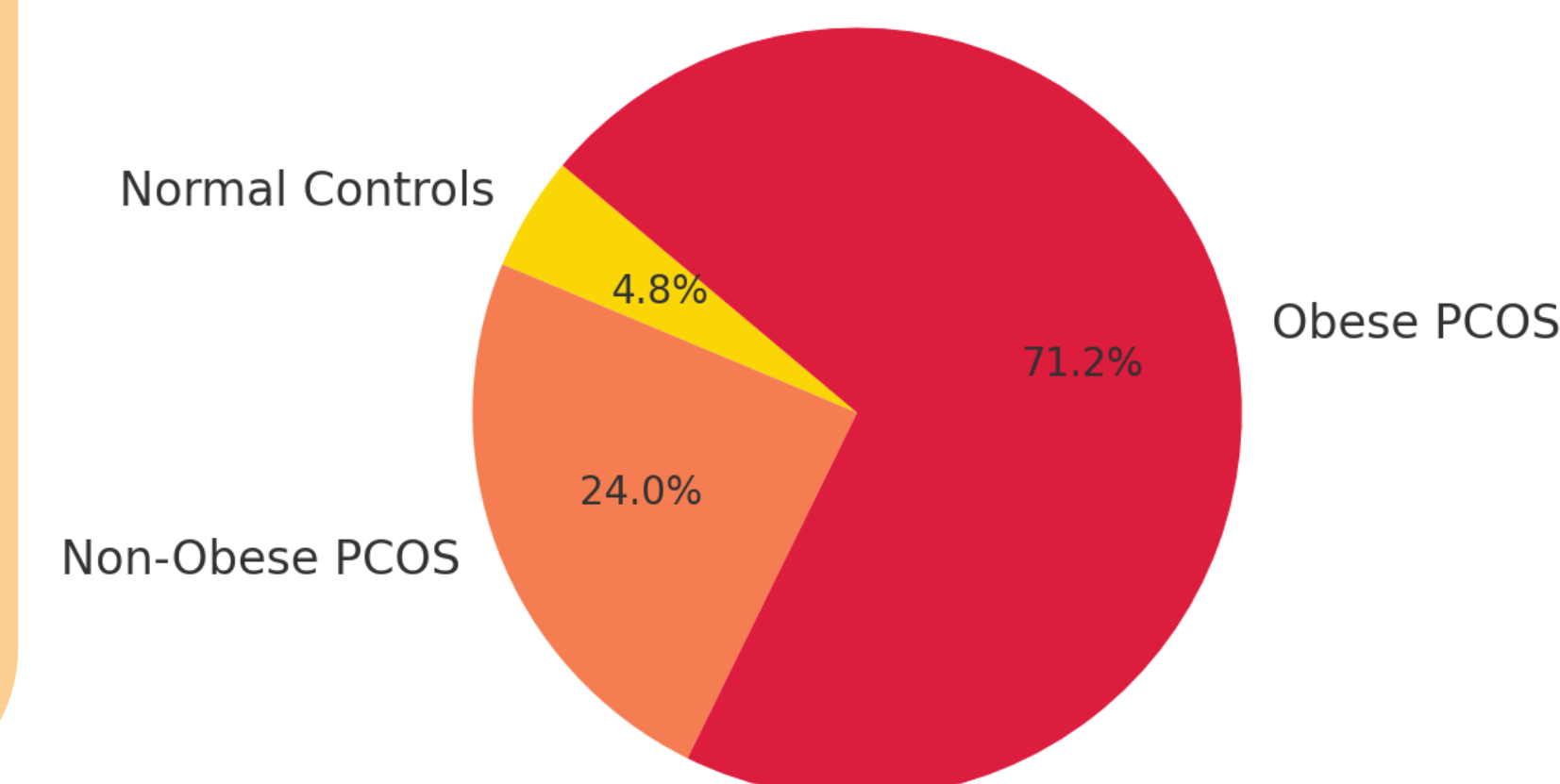
- Study Type: Prospective observational cross-sectional study
- Participants: 120 newly diagnosed PCOS patients from Gynae OPD, BR Singh Hospital, Eastern Railways, Sealdah
- Duration: Conducted over 2 years
- Grouping:
 - Obese group: BMI ≥ 25
 - Non-obese group: BMI < 25
 - Control Group: 90 women without PCOS
- Insulin Resistance Measurement:
 - Calculated using HOMA-IR formula: $(\text{Fasting Glucose} \times \text{Fasting Insulin}) / 405$
- HOMA-IR > 3.8 considered as insulin resistance



Women with Acne in 3 Groups

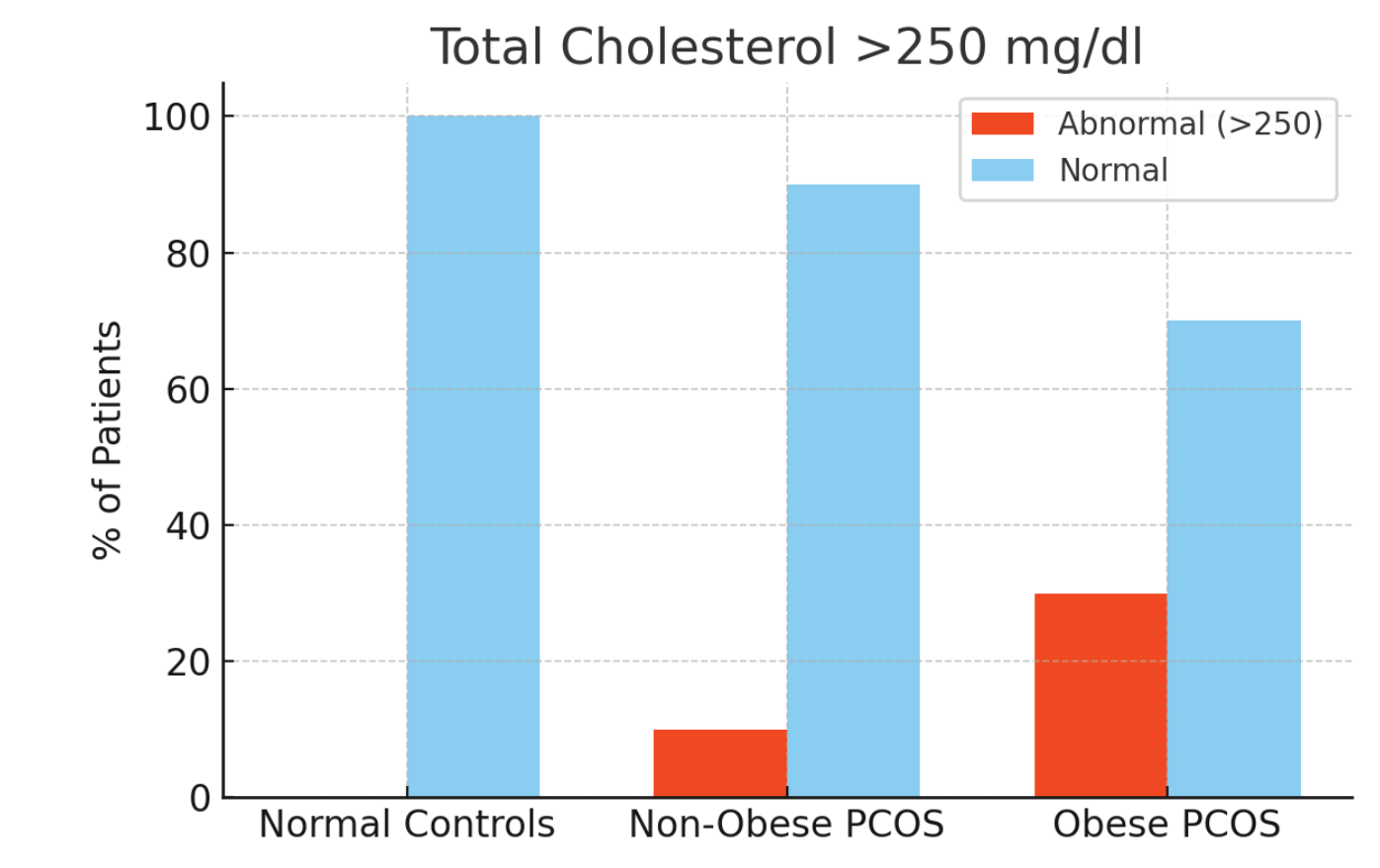
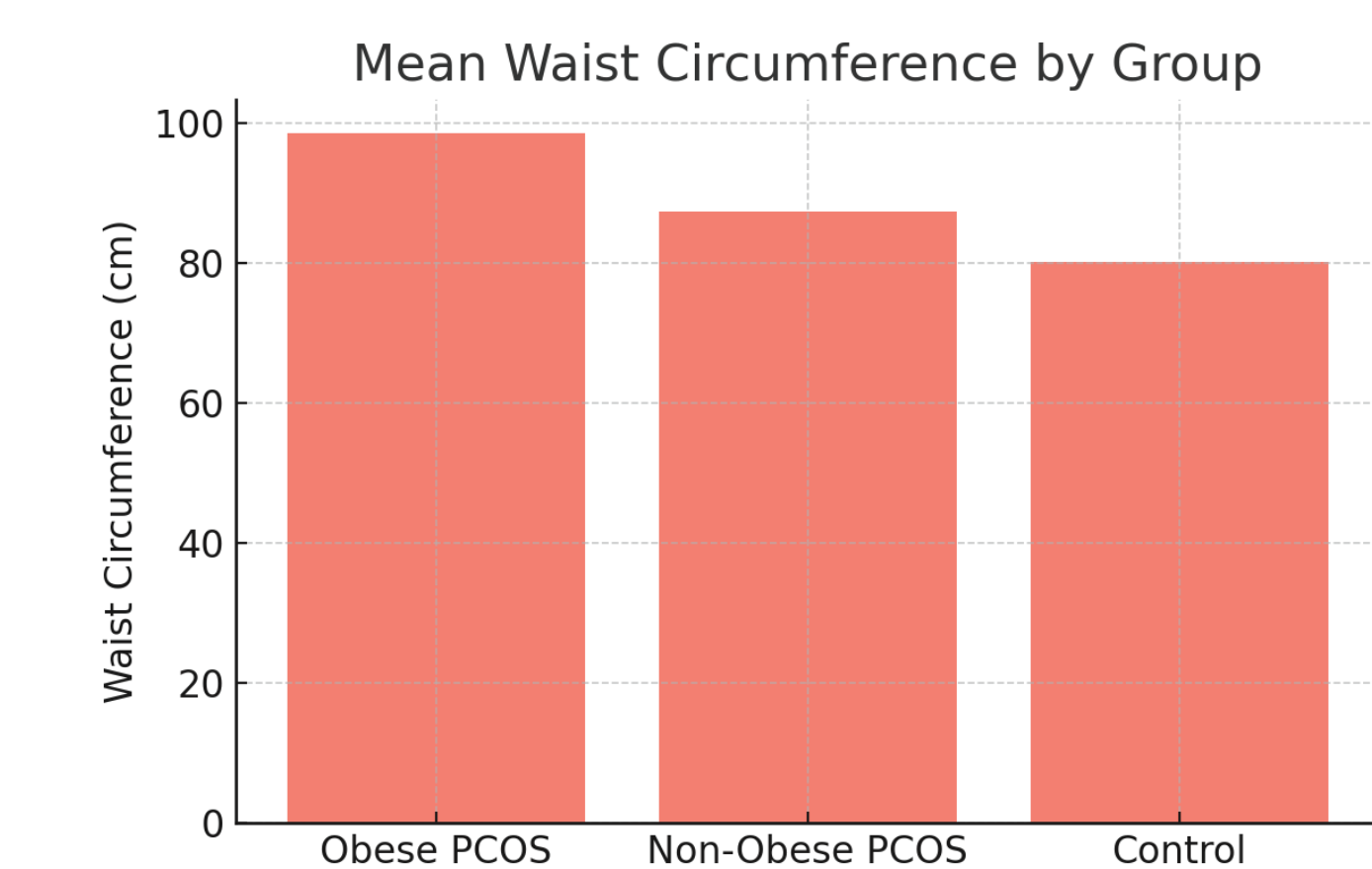


Raised Testosterone Levels (>1.2 ng/ml)



RESULTS

- ▶ Comparable Age: Mean age was similar across all three groups.
- ▶ Anthropometric Differences: Obese PCOS patients had higher waist circumference; waist-to-hip ratio was similar between obese and non-obese PCOS groups.
- ▶ Metabolic Profile: Obese PCOS patients showed significantly higher fasting blood sugar, HOMA-IR scores (almost double), dyslipidemia, and hyperandrogenemia (e.g., acne).
- ▶ Non-Obese PCOS vs Controls: Non-obese PCOS group had higher insulin resistance, dyslipidemia, and elevated androgen markers (testosterone, DHEAS) compared to normal controls.
- ▶ Metabolic Syndrome Prevalence: Detected in 58% of obese PCOS, 30% of non-obese PCOS, and 6% of controls — statistically significant in both PCOS groups.



CONCLUSIONS

PCOS is individually an important risk factor for insulin resistance and metabolic derangements irrespective of the BMI status. Even though Risk of Metabolic syndrome and Insulin resistance is highest in Obese women with PCOS, its prevalence is high in nonobese PCOS as compared to normal controls.