



**SREE BALAJI MEDICAL COLLEGE & HOSPITAL
CHROMEPET, CHENNAI - 600044**



**DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
AND MEDICAL EDUCATIONAL UNIT**

PCOS AWARENESS MONTH

Cordially invite you to journal club

TITLE : Effects of combined METFORMIN and SEMAGLUTIDE therapy on body weight, metabolic parameters, and reproductive outcomes in overweight/obese women with polycystic ovary syndrome : a prospective, randomized, controlled, open-label clinical trial

PRESENTER

***Dr Ranga Vaishnavi
First year PG
OBG***

MODERATORS

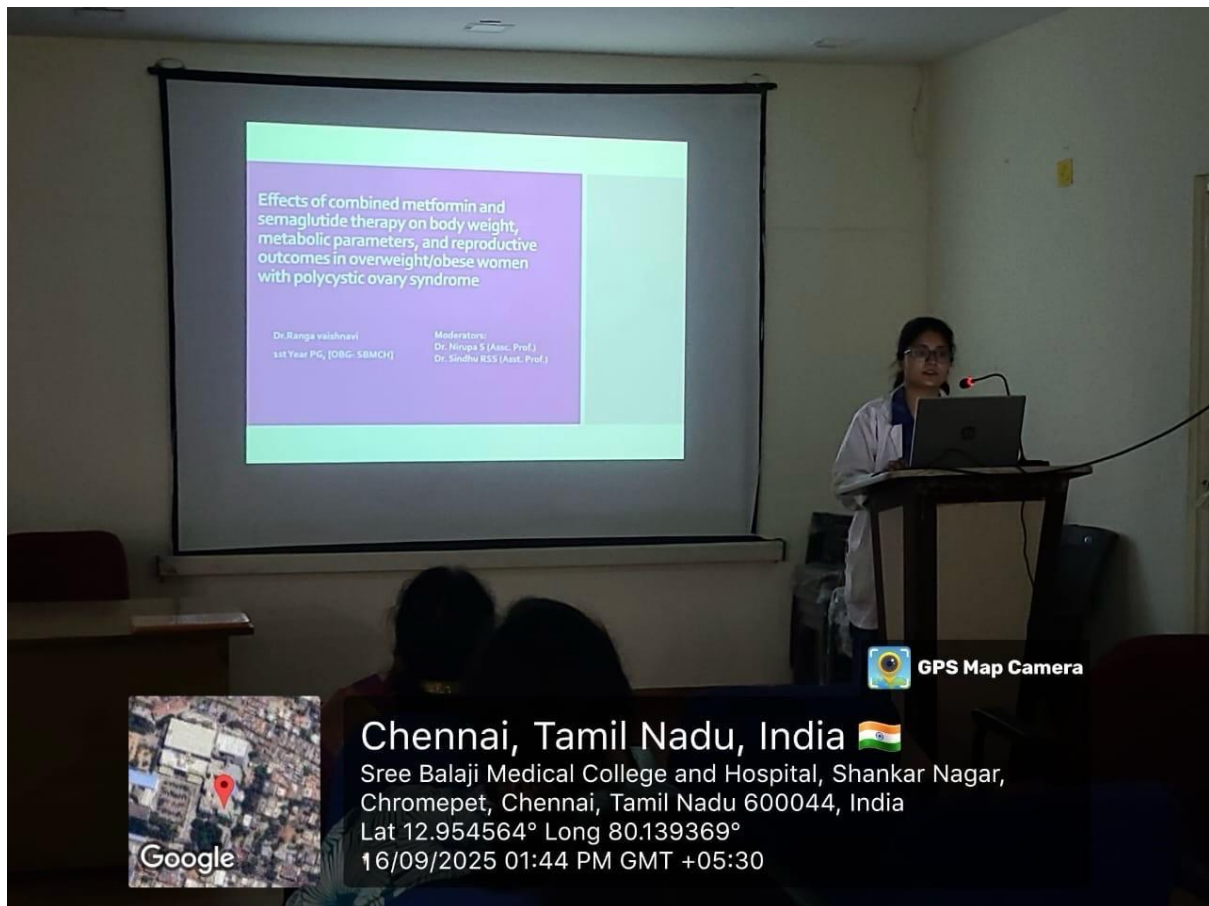
***Dr. Nirupa.S
Associate professor
Dept of OBG***

***Dr. Sindhu RSS
Assistant Professor
Dept of OBG***

***Date: 16/09/25
Time: 1pm -3pm
Place: Raman Hall***

**PROF.DR.SASIKUMAR .P
DEAN,
SBMCH**

**PROF. DR. MEENA .T.S.
HOD
DEPT OF OBG
SBMCH**



PRESENTER:

Dr. Ranga Vaishnavi

1st year PG

Dept of OBG

SBMCH

MODERATORS:

Dr. Nirupa S (Assc. Prof)

Dr. Sindhu RSS (Asst. Prof)

TITLE : Effects combined Metformin and Semaglutide therapy on bodyweight, metabolic parameters and reproductive outcomes in overweight/obese women with PCOS

JOURNAL NAME: Reproductive Biology and Endocrinology

Authors: Haiyan Chen, Xiaohui Lei, Dangfang Liu

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Institution: The Second Affiliated Hospital of Chongqing Medical University,
Chongqing, China

SUMMARY :

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in reproductive-age women, affecting 11–13% and characterized by hyperandrogenism, oligo/anovulation, and polycystic ovarian morphology, with risks such as obesity, insulin resistance, infertility, diabetes, cardiovascular disease, and endometrial cancer. Lifestyle modification and weight loss improve symptoms but are difficult to sustain, while metformin enhances insulin sensitivity and ovulation yet offers modest weight reduction. Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) such as semaglutide promote weight loss, metabolic improvement, and better fertility outcomes, prompting evaluation of their combined use with metformin. A prospective randomized controlled open-label trial at the Second Affiliated Hospital of Chongqing Medical University compared metformin monotherapy with metformin plus semaglutide in overweight/obese PCOS women unresponsive to lifestyle intervention. One hundred women aged 18–40 years with BMI ≥ 24 kg/m² were enrolled, of whom 80 completed the study; exclusions included diabetes, androgen-secreting tumors, Cushing's, abnormal hepatic/renal function, recent hormonal therapy, pregnancy, or severe infertility. Participants received metformin titrated to 1000 mg twice daily, with or without semaglutide escalated from 0.25 mg to 1 mg weekly for 16 weeks, followed by 24 weeks of metformin continuation alone. Outcomes included anthropometric measures, biochemical indices, and reproductive endpoints. Results showed that combination therapy achieved greater reductions in weight, BMI, insulin resistance, lipids, and inflammation compared with metformin alone. Reproductive outcomes were superior, with higher rates of menstrual recovery, ovulation, and spontaneous pregnancies, and benefits persisted after semaglutide withdrawal. Strengths included being the first randomized trial of this combination in PCOS and reporting both metabolic and reproductive outcomes. Limitations were its single-center design, small sample size, short therapy duration, restriction to Chinese women, and lack of cost, safety, or long-term tolerability data. Overall, metformin plus semaglutide appears more effective than metformin alone in improving outcomes in obese PCOS women, though larger multi-ethnic trials are needed before routine use.

