

# The effect of intensive lifestyle intervention on glycaemia, body mass index and lipid profile in overweight and obese women with prediabetes with history of gestational diabetes mellitus: A randomized controlled trial

Zainal Abidin Nurul Huda<sup>1</sup>, Raja Azwan Raja Nurazni<sup>2</sup>, Bahari Rashidah<sup>1</sup>, Mohd Noor Nurain<sup>1,2</sup>, Ibrahim Nor Nadziroh<sup>1</sup>, Wan Nawi Wan Muhammad Ihsan<sup>3</sup>, Jelani Nurzalina<sup>4</sup>

<sup>1</sup>Clinical Research Centre, Hospital Putrajaya, <sup>2</sup>Endocrine Unit, Department of Medicine, Hospital Putrajaya, <sup>3</sup>Physiotherapy Unit, Hospital Putrajaya, <sup>4</sup>Dietetic Unit, Hospital Putrajaya

## ABSTRACT

**Introduction:** Intensive lifestyle intervention (ILI) with physical activity and dietary intervention have proven to reduce or prevent the development of type 2 diabetes mellitus in the future. To date, there is a lack of studies to assess the feasibility of intensive lifestyle intervention in high-risk women with prediabetes in Malaysia. Therefore, we aimed to determine the efficacy of 6 months of ILI in prediabetes overweight and obese women with a history of GDM **Methods:** Subjects were randomized into intensive lifestyle intervention (ILI) or standard medical care (SMC) group. The intervention included dietary counselling and exercise intervention at baseline, 3 months and 6 months with monthly phone consultations and regular weekly contact sessions via WhatsApp and emails. Subjects in SMC groups received standard consultations at a similar duration. The primary and secondary outcomes were a return to euglycemia, and changes in Body Mass Index (BMI) and lipid parameters. **Results:** There were 37 subjects where 22 subjects were randomized to the ILI group and 15 subjects were in the SMC group. Half of the subjects had Impaired Glucose Tolerance (IGT) and a majority (89.2%) were Class II Obesity. Ten subjects (45.5%) in the ILI group returned to euglycaemia compared to only two subjects (13.3%) in the SMC group (p-value = 0.040). However, there were no significant differences in BMI and lipid parameters within and between groups. **Conclusion:** A higher percentage of subjects returned to euglycaemia in the ILI group compared to the SMC group. However, further study with a larger sample size is needed to see any difference in BMI and lipid parameters between the two groups.