

## Maternal haemodynamic changes in gestational diabetes mellitus (GDM) with or without hypertensive disorders of pregnancy (HDP)

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**Objective.** Maternal haemodynamic maladaptation has been described in pregnancies complicated by GDM or HDP. The aim of our study was to compare haemodynamic features in GDM pregnancies with or without HDP (GDM-HDP *versus* isolated GDM).

**Materials and Methods.** A prospective study including 121 GDM patients referred to our unit from 2022 to 2023 was conducted. Haemodynamic assessment was performed by Ultrasonic Cardiac Output Monitor (USCOM) at three gestational age intervals: 26-30, 32-35, 36-38 weeks.

**Results.** 11 GDM women developed HDP (9%). There were no differences in anthropometric maternal parameters between the two groups, except for higher maternal age in GDM-HDP group ( $40.82 \pm 7.8$  *versus*  $36.73 \pm 5.3$ ). No differences were found in OGTT values, glycaemic control, and perinatal outcomes

(urgent caesarean section, birth weight, pH < 7, five-minute APGAR < 7, bases excess > 12, neonatal intensive care unit admission). Gestational age at delivery was lower in GDM-HDP group ( $38.2 \pm 0.9$  *versus*  $39.1 \pm 1.2$  weeks). Total vascular resistance (TVR) at third USCOM assessment was higher in GDM-HDP group compared to isolated GDM (1,061.60 *vs* 1,315.09, p = 0.001). At logistic regression, neither maternal age or TVR were independently associated with HDP development in GDM patients.

**Conclusions.** A worse haemodynamic adaptation to pregnancy, expressed by higher TVR, can be detected in GDM-HDP population, probably for combined effects of advanced maternal age, high blood pressure and hyperglycaemia on vascular system. This could be helpful in detecting a subgroup of GDM patients with a predisposition to cardiovascular disease in later life.