**Table S1** Screening protocol for gestational diabetes mellitus at the Leicester Royal Infirmary

|  |  |  |
| --- | --- | --- |
| **OGTT at booking (and repeat at 26-28 weeks if normal)** | **OGTT at 16 weeks (and repeat at 26-28 weeks if normal)** | **OGTT at 26-28 weeks** |
| Previous GDM | BMI >40 kg/m2 at booking | BMI >30 kg/m2 at booking |
|  |  | Previous baby ≥4.5kg at birth |
| First degree relative with diabetes |
| High risk ethnicity (South Asian, Black Caribbean, Middle Eastern, Eastern European) |
| PCOS |
| **OGTT at any gestation ≤34+0 weeks:** 2+ glycosuria on 1 occasion, 1+ glycosuria on ≥2 occasions | | |

**OGTT, oral glucose tolerance test; PCOS, polycystic ovarian syndrome; BMI, body mass** index.

**Table S2** Descriptors and outputs of linear mixed model for brachial augmentation index

|  |  |  |  |
| --- | --- | --- | --- |
| **Model parameter** | **Estimate** | **Std.Error** | **p-value** |
| (Intercept) | 3.365 | 0.043 | <0.001 |
| GroupDIET | 0.302 | 0.093 | 0.001 |
| GroupMET | 0.386 | 0.113 | 0.001 |
| GroupMET\_INS | 0.532 | 0.140 | <0.001 |
| TimeW28+\_W32 | 0.050 | 0.051 | 0.333 |
| TimeW32+\_W36 | 0.090 | 0.049 | 0.068 |
| TimeW36+ | 0.298 | 0.049 | <0.001 |
| Age | 0.011 | 0.004 | 0.003 |
| BMI | -0.001 | 0.003 | 0.012 |
| MAP | 0.010 | 0.002 | <0.001 |
| HR | -0.013 | 0.001 | <0.001 |
| GroupDIET:TimeW28+\_W32 | -0.100 | 0.104 | 0.335 |
| GroupMET:TimeW28+\_W32 | -0.071 | 0.125 | 0.572 |
| GroupMET\_INS:TimeW28+\_W32 | -0.234 | 0.151 | 0.122 |
| GroupDIET:TimeW32+\_W36 | 0.089 | 0.102 | 0.388 |
| GroupMET:TimeW32+\_W36 | -0.104 | 0.119 | 0.381 |
| GroupMET\_INS:TimeW32+\_W36 | -0.223 | 0.154 | 0.147 |
| GroupDIET:TimeW36+ | -0.135 | 0.102 | 0.188 |
| GroupMET:TimeW36+ | -0.209 | 0.122 | 0.086 |
| GroupMET\_INS:TimeW36+ | -0.438 | 0.154 | 0.005 |

Intercept represents the mean brachial augmentation index of participants from the Control group at 24+0 – 27+6 weeks of gestation with values for other covariates as: age (30.6 years), BMI (27.1 kg/m2), mean arterial pressure (83.7 mmHg) and heart rate (91.1 beats per minute). Four levels of Group are: Control, Diet (DIET), Metformin (MET), Metformin + Insulin (MET\_INS). Maternal hemodynamics are measured at 4 gestational windows (Time): 24+0 – 27+6 weeks gestation (intercept), 28+0 – 31+6 weeks (W28+\_W32), 32+0 – 35+6 weeks (W32+\_W36) and ≥36+0 weeks (W36+). These are presented as W1, W2, W3 and W4 in the paper.Group:Time terms in the table represent the two-way interaction effect of the corresponding levels of Group and Time.

**Table S3** Descriptors and outputs of linear mixed model for aortic augmentation index

|  |  |  |  |
| --- | --- | --- | --- |
| **Model parameter** | **Estimate** | **Std.Error** | **p-value** |
| (Intercept) | 2.449 | 0.056 | <0.001 |
| GroupDIET | 0.364 | 0.120 | 0.003 |
| GroupMET | 0.473 | 0.146 | 0.001 |
| GroupMET\_INS | 0.735 | 0.181 | <0.001 |
| TimeW28+\_W32 | 0.043 | 0.068 | 0.528 |
| TimeW32+\_W36 | 0.077 | 0.063 | 0.218 |
| TimeW36+ | 0.323 | 0.065 | <0.001 |
| BMI | -0.010 | 0.004 | 0.010 |
| MAP | 0.012 | 0.002 | <0.001 |
| HR | -0.016 | 0.002 | <0.001 |
| GroupDIET:TimeW28+\_W32 | -0.120 | 0.136 | 0.375 |
| GroupMET:TimeW28+\_W32 | -0.064 | 0.166 | 0.699 |
| GroupMET\_INS:TimeW28+\_W32 | -0.328 | 0.201 | 0.103 |
| GroupDIET:TimeW32+\_W36 | 0.091 | 0.132 | 0.488 |
| GroupMET:TimeW32+\_W36 | -0.089 | 0.154 | 0.564 |
| GroupMET\_INS:TimeW32+\_W36 | -0.343 | 0.199 | 0.085 |
| GroupDIET:TimeW36+ | -0.128 | 0.133 | 0.339 |
| GroupMET:TimeW36+ | -0.213 | 0.160 | 0.182 |
| GroupMET\_INS:TimeW36+ | -0.627 | 0.202 | 0.002 |

Intercept represents the mean aortic augmentation index of participants from the Control group at 24+0 – 27+6 weeks of gestation with values for other covariates as: age (30.6 years), BMI (27.1 kg/m2), mean arterial pressure (MAP: 83.7 mmHg) and heart rate (HR: 91.1 beats per minute).

Four levels of Group are: Control, Diet (DIET), Metformin (MET), Metformin + Insulin (MET\_INS)

Maternal hemodynamics are measured at 4 gestational windows (Time): 24+0 – 27+6 weeks gestation (intercept), 28+0 – 31+6 weeks (W28+\_W32), 32+0 – 35+6 weeks (W32+\_W36) and ≥36+0 weeks (W36+). These are presented as W1, W2, W3 and W4 in the paper.

Group:Time terms in the table represent the two-way interaction effect of the corresponding levels of Group and Time.

**Table S4** Descriptors and outputs of linear mixed model for pulse wave velocity

|  |  |  |  |
| --- | --- | --- | --- |
| **Model parameter** | **Estimate** | **Std.Error** | **p-value** |
| (Intercept) | 2.047 | 0.015 | <0.001 |
| GroupDIET | 0.004 | 0.017 | 0.835 |
| GroupMET | 0.021 | 0.020 | 0.299 |
| GroupMET\_INS | 0.020 | 0.028 | 0.481 |
| TimeW28+\_W32 | 0.035 | 0.015 | 0.022 |
| TimeW32+\_W36 | 0.058 | 0.015 | <0.001 |
| TimeW36+ | 0.086 | 0.015 | <0.001 |
| Age | 0.003 | 0.001 | 0.008 |
| BMI | 0.002 | 0.001 | 0.029 |
| MAP | 0.004 | 0.001 | <0.001 |
| HR | 0.004 | <0.001 | <0.001 |

Intercept represents the mean pulse wave velocity of participants from the Control group at 24+0 – 27+6 weeks of gestation with values for other covariates as: age (30.6 years), BMI (27.1 kg/m2), mean arterial pressure (MAP: 83.7 mmHg) and heart rate (HR: 91.1 beats per minute).

Four levels of Group are: Control, Diet (DIET), Metformin (MET), Metformin + Insulin (MET\_INS)

Maternal hemodynamics are measured at 4 gestational windows (Time): 24+0 – 27+6 weeks gestation (intercept), 28+0 – 31+6 weeks (W28+\_W32), 32+0 – 35+6 weeks (W32+\_W36) and ≥36+0 weeks (W36+). These are presented as W1, W2, W3 and W4 in the paper.