Supplementary Figures and Tables.

Supplemental Figure S1. Summarized description of the subanalysis design and analyzed women.

Supplemental Table S1. Trends in lifestyle throughout the pregnancy.Supplemental Table S2. Maternal Pregnancy and Neonatal Outcomes of women with GDM according to control and intervention groups.

Supplemental Table S3. Characteristics of women with normal-for-gestational-age and small-for-gestational-age newborns.



Figure S1. Summarized description of the subanalysis design and analyzed women.

**CONSORT 2010 Flow Diagram**

Follow-up of women with gestational diabetes mellitus:

* Gestational diabetes mellitus follow-up
* Visit at 36-38 gestational weeks
* Delivery

Lost to follow-up (lost to follow-up, did not attend gestational diabetes mellitus screening) (n = 48)

Discontinued intervention (declined visit, changed hospital) (n = 18)

Lost to follow-up (lost to follow-up, did not attend gestational diabetes mellitus screening) (n = 51)

Discontinued control (declined visit, changed hospital) (n = 9)

Randomized at 12-14 gestational weeks

 (n = 1000)

Analysed (n = 697)

Analysed (n = 177)

## Analysis

Follow-up of women with normal glucose tolerance:

* Visit at 36-38 gestational weeks
* Delivery

## Follow-Up

Allocated to intervention (n =500)

Received allocated intervention (n = 500)

Allocated to control (n = 500)

Received allocated control (n = 500)

Excluded (n =1418)

* Not meeting inclusion criteria (n = 376)
* Refused to participate (n=917)
* Other reason (n = 125)

Assessed for eligibility at 8-12 gestational weeks

(n =2418)

## Enrollment

## Allocation

Table S1. Trends in lifestyle throughout the pregnancy.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | At baseline | 24-28 GW | 36-38 GW | *P*a |
| EVOO (ml/day) | NGT | 26 ± 22 | 29 ± 22 | 33 ± 23 | .020 |
| GDM | 26 ± 19 | 29 ± 19 | 46 ± 28 | .001 |
| *P*b | .953 | .945 | .001 |  |
| Pistacho/Nuts (day/weeks) | NGT | 1.4 ± 2.0 | 2.6 ± 2.8 | 2.6 ± 2.7 | .128 |
| GDM | 1.4 ± 2.1 | 2.6 ± 2.8 | 4.2 ± 3.1 | .001 |
| *P*b | .984 | .873 | .001 |  |
| Nutrition Score | NGT | 0.37 ± 3.2 | 2.71 ± 3.66 | 3.83 ± 3.55 | .001 |
| GDM |  0.27 ± 3.16 | 2.40 ± 3.55 | 7.31 ± 3.02 | .001 |
| *P*b | .699 | .319 | .001 |  |
| MEDAS Score | NGT | 4.90 ± 1.73 | 6.68 ± 1.82 | 7.05 ± 1.81 | .001 |
| GDM | 4.89 ± 1.56 | 6.57 ± 1.77 | 8.63 ± 1.84 | .001 |
| *P*b | .931 | .489 | .001 |  |
| Physical Activity >0 n(%) | NGT | 80 (12.4) | 49(7.2) | 36 (5.3) | .001 |
| GDM | 19 (10.8) | 9(5.3) | 5 (2.8) | .001 |
| *P*b | .850 | .655 | .339 |  |

Data are Mean + SD or number (%).

Abbreviation: GW, gestational weeks; EVOO, extra virgin olive oil; MEDAS Score, 14-point Mediterranean Diet Adherence Screener (MEDAS).

Physical Activity Score >0: a. Walking daily (>5 days ⁄ week). Score 0: At least 30 min; Score +1, if >60 min; Score -1, if <30 min. b. Climbing stairs (floors ⁄ day, >5 days a week): Score 0, Between 4 and 16; Score +1, >16; Score -1: <4)

*P*a denote differences within each group compared to baseline (ANOVA); and *P*b, denote differences between groups at different stages of pregnancy (T-test).

Table S2. Maternal Pregnancy and Neonatal Outcomes of women with GDM according to control and intervention groups in women with GDM.

|  |  |  |  |
| --- | --- | --- | --- |
|  | CONTROL GroupGDM (n=103) | INTERVENTION Group GDM (n=74) | P |
| *MATERNAL OUTCOMES* |  |  |  |
| 75g-OGTT 24-28 GW Fasting Blood Glucose mmol/L | 5.2 ± 0.4 | 5.1 ±0.4 | 0.473 |
|  1 h Blood Glucose mmol/L | 8.7 ± 6.7 | 9.0 ± 1.9 | 0.338 |
|  2 h Blood Glucose mmol/L | 7.8 ± 1.7 | 7.4 ±1.8 | 0.306 |
| HbA1c (%) 24-28 GW  mmol/molHbA1c (%) 36-38 GW  mmol/mol | 5.2 ± 0.333 ± 0.95.4 ± 0.436 ± 1.1 | 5.1 ± 0.332 ±0.95.3 ± 0.334 ± 0.9 | 0.1870.1870.0530.053 |
| Fasting Blood Glucose 36-38 GW mmol/L | 4.4 ± 0.4 | 4.4 ± 0.4 | 0.951 |
| Fasting Serum Insulin mcUI/mL 24-28 GW 36-38 GW | 13.6 ± 7.210.2 ± 6.5 | 11.9 ± 7.311.8 ± 9.4 | 0.2310.347 |
| HOMA-IR 24-28 GW 36-38 GW | 3.3 ± 2.02.2 ± 1.6 | 2.8 ± 2.12.2 ± 1.4 | 0.0370.959 |
| Treatment of GDM Nutritional Insulin (total) Bolus Basal Basal/Bolus | 70/103 (65.4)33/103 (32.0)6/103 (5.8)23/103 (22.3)4/103 (3.9) | 60/74 (81.0)14/74 (19.0)1/74 (1.4)12/74 (16.2)1 /74 (1.4) | 0.010 |
| Weight gain (Kg) 12 GW to 24-28 GW Weight gain (Kg) 12 GWto 36-38 GW | 5.3± 2.97.4 ± 4.4 | 5.0 ± 2.96.8 ± 4.0 | 0.4560.451 |
| Systolic BP (mm Hg) 24-28 GW Diastolic BP (mm Hg) 24-28 GW Systolic BP (mm Hg) 36-38 GW Diastolic BP (mm Hg) 36-38 GW  | 108 ± 1066 ± 9111 ± 1274 ± 9 | 110 ±1265 ± 9112 ±1073 ± 9 | 0.4960.3570.2950.548 |
| Pregnancy-induced  hypertension Preeclampsia Albuminuria | 8/103 (7.8)7/103 (6.8)2/103 (1.9) | 000 | 0.008N.A.N.A |
| Urinary Tract Infection  | 20/103 (19.4) | 7/74 (9.5) | 0.037 |
| Delivery Vaginal  Instrumental Cesarean section Emergency | 72/103 (69.9)20/103 (19.4)11 /103 (10.7)6/103 (5.8) | 60/74 (81.1)6/74 (8.1)8/74 (10.8)1/74 (1.4) | 0.1070.131 |
| Perineal Trauma | 19 /103 (18.4) | 1/74 (1.4) | 0.001 |
| *NEONATAL OUTCOMES* |  |  |  |
| SHOULDER DYSTOCIA | 0/103 | 0/74 | N.A. |
| Gestational Age at birth (weeks) < 37 GW < 34 GW | 39.5 ± 1.67/103 (6.8)0/103 | 39.5 ± 1.11/74 (1.4)0/74 | 0.8640.084N.A |
| Birthweight (g) Percentile | 3,206 ± 52847.8 ± 30.1 | 3,160 ± 35936.7 ± 26.9 | 0.5490.451 |
| Length (cm) Percentile | 49.1 ± 2.239.8 ± 30.1 | 48.9 ± 1.836.7 ±26.9 | 0.5050.549 |
| LGA >90 percentile >4,500 g | 7/103 (6.8)2/103 (1.9) | 1/74 (1.4)0/74 | 0.084N.A. |
| SGA <10 percentile | 11/103 (10.7) | 1/74 (1.4) | 0.012 |
| Ph Cord Blood<7 | 7.27 ±0.60/103 | 7.29 ± 0.080/74 | 0.207N.A. |
|  Apgar Score at 1min <7 | 8.8 ±0.93/103 (2.9) | 8.8 ± 0.81/74 (1.4) | 0.989N.A. |
| Apgar Score at 5 min <7 | 9.8 ± 0.40/103 | 9.7 ± 0.40/74 | 0.373N.A. |
| Neonatal Hypoglycemia Respiratory distress Hiperbilurrubinemia | 4/103 (3.9)1/103 (1.0)3/103 (2.9) | 0/740/742/74 (2.7) | 0.2730.6540.725 |
| NICU  | 8/103 (7.8) | 2/74 (2.7) | 0.078 |

GDM, Gestational Diabetes Mellitus; NGT, Normal Glucose Tolerance. BP, Blood Pressure. LGA, large for gestational age. SGA, small for gestational age. NICU, Neonatal intensive care unit.

N.A. Not applicable.

p denote differences between groups (Intervention Group vs Control Group).

Table S3. Characteristics of women with normal-for-gestational-age and small-for-gestational-age newborns.

|  |  |  |  |
| --- | --- | --- | --- |
|  | NGA (n=822) | SGA (n=30) | *P* |
| Age (years) | 32.90 ± 5.15 | 32.57 ± 5.10 | .730 |
| Race/Ethnicity |  |  |  |
|  Caucasian  | 553 (61.8) | 21 (70.0) | .001 |
|  Hispanic | 243 (29.6) | 8 (26.7) |
|  Others | 26 (3.2) | 1 (3.3) |
| Family history of  |  |  |  |
|  Type 2 Diabetes | 170 (20.7) | 7 (23.3) | .846 |
| MetS (>2 components) | 170 (20.7) | 5 (16.7) |
| Previous history of  |  |  |  |
|  Gestational Diabetes | 24 (2.9) | 1 (3.3) | .979 |
|  Miscarriages | 259 (31.5) | 9 (30.0) |
| Educational status |  |  |  |
|  Elementary education  | 69 (8.4) | 5 (16.7) | .372 |
|  Secondary School | 192 (23.4) | 10 (33.3) |
|  University Degree | 555 (67.5) | 15 (50.0) |
|  UNK | 6 (0.7) | 0 (0) |
| Employment | 638 (77.6) | 20 (66.7) | .327 |
| Number of pregnancies  |  |  |  |
| Primiparous | 356 (43.4) | 14 (46.7) | .987 |
|  Second pregnancy | 267 (32.5) | 10 (33.3) |
| >2 pregnancies | 199 (24.1) | 6 (20.0) |
| Smoker  |  |  |  |
|  Never  | 450 (54.7) | 16 (53.3) | .840 |
|  Current | 66 (8.0) | 4 (13.3) |
| Gestational Age at baseline (GW) | 12.1 ± 0.5 | 12.1 ± 0.3 | .384 |
| Body Weight (kg)  |  |  |  |
| Prepregnancy | 60.7 ± 10.8 | 58.2 ± 7.6 | .090 |
|  At Baseline  | 62.8 ± 11.1 | 61.1 ± 6.8 | .204 |
|  24-28 GW | 67.9 ± 10.8 | 66.7 ± 8.2 | .477 |
|  36-38 GW/Last GW | 72.5 ± 11.1 | 71.8 ± 9.4 | .759 |
| Weight gain |  |  |  |
|  At baseline | 2.0 ± 2.9 | 2.9 ± 4.0 | .265 |
|  24-28 GW | 7.4 ± 3.9 | 8.6 ± 5.1 | .213 |
|  36-38 GW/Last GW | 11.7 ± 5.5 | 12.3 ± 5.9 | .686 |
| EWG | 145 (17.6) | 6 (20.0) | .016 |
| AWG | 471 (57.3) | 10 (33.3) |
| IWG | 206 (25.1) | 14 (46.7) |
| BMI (kg/m²)  |  |  |  |
| Prepregnancy | 23.1 ± 3.8 | 22.5 ± 3.3 | .352 |
|  At baseline | 23.8 ± 3.9 | 23.6 ± 3.4 | .725 |
| Blood Pressure (mm Hg) |  |  |  |
|  Systolic at Baseline  | 107 ± 10 | 107 ± 8 | .921 |
|  Diastolic at Baseline  | 66 ± 10 | 66 ± 10 | .766 |
|  Systolic at 24-28 GW  | 105 ± 11 | 106 ± 11 | .870 |
|  Diastolic at 24-28 GW  | 63 ± 9 | 64 ± 10 | .632 |
|  Systolic at 36-38 GW  | 112 ± 12 | 122 ± 22 | .007 |
|  Diastolic at 36-38 GW  | 73 ± 9 | 80 ± 11 | .012 |
| Fasting Blood Glucose (mg/dL) |  |  |  |
|  At Baseline | 81.3 ± 5.9 | 82.5 ± 5.1 | .269 |
|  24-28 GW | 84.7 ± 6.6 | 87.1 ± 6.2 | .052 |
|  36-38 GW | 75.7 ± 7.6 | 76.2 ± 6.5 | .798 |
| HbA1c % (mmol/mol) |  |  |  |
|  At Baseline | 5.2 ± 0.2 (33± 0.8) | 5.3 ± 0.3 (34± 1) | .595 |
|  24-28 GW | 4.9 ± 0.3 (30± 1) | 5.1 ± 0.3 (32± 1) | .022 |
|  36-38 GW | 5.2 ± 0.3 (33± 1) | 5.4 ± 0.3 (36± 1) | .064 |
| HOMA-IR  |  |  |  |
|  At Baseline | 2.1 ± 2.0 | 2.1 ± 1.8 | .988 |
|  24-28 GW | 2.1 ± 1.6 | 2.1 ± 0.9 | .891 |
|  36-38 GW | 2.1 ± 2.5 | 2.0 ± 1.5 | .759 |
| Cholesterol (mg/dL)  |  |  |  |
|  At Baseline | 174 ± 30 | 174 ± 29 | .925 |
|  24-28 GW | 249 ± 44 | 247 ± 40 | .798 |
|  36-38 GW | 275 ± 53 | 251 ± 38 | .060 |
| Triglycerides (mg/dl) |  |  |  |
|  At Baseline | 82 ± 41 | 87 ± 32 | .481 |
|  24-28 GW | 158 ± 54 | 165 ± 53 | .533 |
|  36-38 GW | 228 ± 79 | 233 ± 131 | .900 |
| MEDAS Score  |  |  |  |
|  At Baseline | 4.9 ± 1.7 | 4.7 ± 1.9 | .427 |
|  24-28 GW | 6.7 ± 1.8 | 5.8 ± 1.7 | .010 |
|  36-38 GW | 7.4 ± 1.9 | 6.7 ± 1.3 | .026 |
| Nutrition Score  |  |  |  |
|  At Baseline | 0.39 ± 3.16 | 0.33 ± 4.03 | .945 |
|  24-28 GW | 2.75 ± 3.63 | 1.14 ± 4.02 | .022 |
|  36-38 GW | 4.60 ± 3.72 | 3.18 ± 4.02 | .021 |
| Physical Activity Score >0  |  |  |  |
|  At Baseline | 92 (11.1) | 3 (10.0) | .889 |
|  24-28 GW | 56 | 1 | .790 |
|  36-38 GW | 38 | 1 | .301 |

Data are Mean + SD or number (%).

Abbreviation: NGA, normal for gestational age; SGA, small for gestational age; MetS, Metabolic Syndrome; UNK, unknown; GW, gestational weeks; EWG, excessive weight gain; AWG, adequate weight gain; IWG, insufficient weight gain; BMI, body mass index; MEDAS Score, 14-point Mediterranean Diet Adherence Screener (MEDAS).

Physical Activity Score >0: a. Walking daily (>5 days ⁄ week). Score 0: At least 30 min; Score +1, if >60 min; Score -1, if <30 min. b. Climbing stairs (floors ⁄ day, >5 days a week): Score 0, Between 4 and 16; Score +1, >16; Score -1: <4).