Supplementary Appendix S1: Visit Frequency based on diagnosis

Initial visit: classification at >24 weeks
1. Observation arm (no HTN no DM)
2. Diabetes (GDM/DM)
3. Hypertensive arm (mild/mod, severe)

**Observation arm**
- Visits every 4 weeks x 3 then q2 weeks x 2 then weekly after 36 weeks

**Diabetes and GDM arm**
- Visit every 2 weeks until 32 weeks then every week

**Severe HTN arm**
- Severe HTN: SBP >160 or DBP >110; but <170/115
- See weekly until BP in mild/mod range then follow that visit frequency below

**Mild-moderate HTN mild PET arm**
- Mild-moderate HTN: SBP >140 <160; DBP >90 <110 or "well controlled HTN" BP <140/90
- See every 2 weeks until 36 weeks then weekly

**Diabetes and hypertension**: follow visit profile with shortest frequency between visits but record clinic data accordingly (i.e: diabetes q2wks, HTN q1wk)

**Extreme HTN or mod/severe PET**: SBP >170 DBP >115 or any PET symptoms at any visit require minimum 24hr admission/observation for intense treatment until BP is at target and symptom resolution versus induction/delivery
Supplementary Appendix D2: Diabetes Mellitus diagnosis, classification and treatment protocols

Diagnosis and Classification of Diabetes Mellitus type at 1st antenatal visit (24 to 28 weeks)

| 24-28 Weeks | 75g oral Glucose Tolerance Test (oGTT) (fasting, 1hr + 2hr post) |
|-------------|---------------------------------------------------------------|
| Pre-existing DM | Fasting BG > 126 mg/dL or 2hr oGTT: >200 mg/dL |
| Gestational DM | BG >92 mg/dL and < 126 mg/dL 1hr post oGTT >180 mg/dL 2hr post pGTT > 153 mg/dL and < 200 mg/dL |
| Normal | All values below the above thresholds |

Start protocol “insulin”
Start protocol “Gestational DM”
Routine care

If risk markers: macrosomia, polyhydramnios – repeat oGTT

75g oGTT - Algorithm:

- Ensure that patient has been fating for > 8 hrs (1 night). Document hour of last meal
- Advise patient that she cannot eat, drink, or smoke while the test is ongoing
- If patient not fasting, she can come back for testing on the following day or week

Step #1: Perform capillary glycemia, which will be the ‘fasting blood glucose’

Step #2: Administer 75g glucose (Glucola), which patient has to drink within 5 mins

Step #3: Perform capillary blood glucose at 1 and 2hr following glucose load, document les results and follow the above algorithm
TREATMENT PROTOCOL WITHOUT INSULIN

Pre-existing or gestational DM new diagnosis

Nutrition, diet, exercise and
Teaching on home BG monitoring

Antenatal visit every 1-2 weeks, fasting
Review diet, exercise, adherence to medications
Fasting BG

Fasting or AC BG < 90 mg/dL
PC 1hr <140 mg/dL

AT TARGET
Continue monitoring BG daily at home

If fasting or AC BG > 126 mg/dL
Start metformin and insulin

Start treatment if >2 BG not at target

Fasting or AC BG > 90 mg/dL and <126 mg/dL
PC 1hr > 140mg/dL

NOT AT TARGET
Start metformin 500 mg PO BID x 7 days, and increase to 1g PO BID
If already on metformin 1g PO BID start insulin protocol and add insulin to metformin

Start insulin protocol and + continue metformin
TREATMENT PROTOCOL WITH INSULIN

Pre-existing or gestational DM with metformin and glycemia not at target

Fasting or AC BG > 126 And <180 mg/dL

Start NPH 4-6 units QHS

Patient checks and documents glycemia 1-2x/day. Adjust insulin per insulin sliding scale

Fasting BG > 180 mg/dL

Start NPH 10 units QHS

Return to antenatal clinic every 1-2 week fasting and check capillary fasting BG

Review adherence to medication, document glycemia, et adjust
INSULIN SLIDING SCALE

HUMULIN R BEFORE MEALS AND NPH AT BEDTIME

If Glycemia prior to breakfast:

- >140: Add 6 units to the NPH dose taken at bedtime
- 116-140: Add 4 units to the NPH dose taken at bedtime
- 100-115: Add 2 units to the NPH dose taken at bedtime
- 91-100: Add 1 unit to the NPH dose taken at bedtime
- 80-90: Prenez la même dose de NPH prise la nuit précédente
- <80: Or nighttime hypoglycemia—reduce the NPH dose taken on the night before by 2 units

Si la glycémie 1 heure après le petit-déjeuner est:

- >170: Add 2 units to the dose of Humulin R before breakfast
- 141-170: Add 1 unit to the dose of Humulin R before breakfast
- 110-140: Take the same dose of Humulin R as taken at breakfast on the preceding day
- <110: Or morning hypoglycemia—reduce the Humulin R dose taken at breakfast by 2 units

Si la glycémie 1 heure après le déjeuner est:

- >170: Add 2 units to the dose of Humulin R before lunch
- 141-170: Add 1 unit to the dose of Humulin R before lunch
- 110-140: Take the same dose of Humulin R as taken at lunch on the preceding day
- <110: Or afternoon hypoglycemia—reduce the Humulin R dose taken at lunch by 2 units

Si la glycémie 1 heure après le dîner est:

- >170: Add 2 units to the dose of Humulin R before diner
- 141-170: Add 1 unit to the dose of Humulin R before diner
- 110-140: Take the same dose of Humulin R as taken at diner on the preceding day
- <110: Or evening hypoglycemia—reduce the Humulin R dose taken at diner by 2 units

**If elevated BG because of excess snack or meal with too much carbohydrates, correct the provoking factor and keep the same insulin dose.

Target blood glucose:

|                          | 80-90 mg/dL | 110-140 mg/dL |
|--------------------------|-------------|---------------|
| Fasting                  |             |               |
| 1h after meal            |             |               |
**Supplementary Appendix S3: Intrapartum Diabetes Management Protocol**

### Daily quantity of Insulin

- **≥30 units**
  - Diet: clear liquids
  - IV: D5W at 75-100cc/hr
  - Glycaemias: q 2 hrs until delivery
  - Insulin: SC with sliding scale

- **< 30 units**
  - Diet: regular
  - IV: as needed
  - Glycaemias: q 2 hrs x 2

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### Start INSULIN:

Calculate initial insulin dose: Daily insulin quantity divided by 2 and again by 24 to reach initial hourly dose.

**EX:** Women taking 50 units am and 50 units pm →
total daily dose of 100 units /24h → 100÷2 = 50 → 50÷24 = 2.08 → ~2 units q 2 hr

### Glycaemia mg/dL

- **<70**
  - Bolus D50, stop insulin

- **70-126**
  - Continue with same dose
  - 0 unit

- **127-140**
  - Increase the dose by 1 unit
  - 1 unit

- **141-160**
  - Increase the dose by 2 units
  - 2 units

- **161-180**
  - Increase the dose by 3 units
  - 3 units

- **181-200**
  - Increase the dose by 4 units
  - 4 units

- **≥200**
  - Glycaemias q1H, cesser soluté, débuter insuline IV (voir ordonnances)

**Glycaemia 70-125**

Glycaemias q 4 hrs until delivery with target as above

**Glycaemia ≥126**

Glycaemias q 2 hrs until delivery

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**DElIVERY**

- Stop insulin sliding scale; Diet: regular if tolerated; IV: D5W at 100-125cc/h x 2 hrs; Glycaemia après 2 hrs

**Glycaemia <70 ou >180 call MD to treat and follow glycaemia q 2 hrs**

**Glycaemia 70-180 and patient tolerating po → stop IV and repeat glycaemia in 2 hrs**

**Glycaemia 70-180 : Stop checking glycaemia today**

**Glycaemia <70 ou >140 call MD to treat glycaemia**

**Glycaemia 70-140**: Stop checking glycaemias today

Fasting glycaemia on following morning
Supplementary Appendix S4: Neonatal Hypoglycemia Protocol

Duration of monitoring: 24 hours

First breastfeeding during the first hour of life

Glycaemia measured 30 minutes after

**DECISION I**

- Glycaemia > 50 mg/dl
  - Check glycaemia in 1 hr
- Glycaemia 25-50 mg/dl
  - Breastfeed* and recheck in 1 hr
- Glycaemia <25 mg/dl
  - 2cc/kg D10% bolus IV x1
    - Recheck in 30 min

**DECISION II**

- Glycaemia >50 mg/dl
  - Glycaemia Q3H
- Glycaemia 35-50 mg/dl
  - Breastfeed + recheck in 1 hr (max x2)
- Glycaemia <35 mg/dl
  - Start D10% at 80-100 cc/kg/day

**Start diazoxide if:**
- Glycaemia <50 mg/dl
- Maximum IV hydration
- IV dextrose 12.5%

*Clinical judgement to decide whether maternal or formula milk indicated
## Supplementary Table S1. Missing values in baseline characteristics across group categories

| Variable                                      | Control 544 n (%) | DM 51 n (%) | HDP 90 n (%) | DM/HDP 30 n (%) |
|-----------------------------------------------|-------------------|-------------|-------------|----------------|
| Gestational age at initial visit              | 4 (0.7)           | 0           | 1 (1.1)     | 0              |
| Age                                           | 7 (1.3)           | 0           | 2 (2.2)     | 0              |
| BMI                                           | 10 (1.8)          | 2 (3.9)     | 1 (1.1)     | 0              |
| Prior pregnancies                             | 2 (0.4)           | 0           | 0           | 1 (3.3)        |
| Live children                                 | 1 (0.3)           | 0           | 0           | 0              |
| Matrimonial status                            | 1 (0.2)           | 0           | 0           | 0              |
| Education length                              | 0                 | 1 (2.0)     | 0           | 0              |
| House built with concrete, n (%)              | 3 (0.6)           | 0           | 0           | 0              |
| Food insecurity, n (%)                        | 5 (0.9)           | 0           | 0           | 0              |
| Current smoker, n (%)                         | 3 (0.6)           | 0           | 0           | 0              |
| Current alcohol use, n (%)                    | 3 (0.6)           | 0           | 0           | 0              |
| Comorbidities                                 |                   |             |             |                |
| One elevated blood pressure in lifetime, n (%)| 3 (0.6)           | 0           | 1 (1.7)     | 0              |
| Preexisting diabetes, n (%)                   | 3 (0.5)           | 0           | 0           | 0              |
| Obstetrical history                           |                   |             |             |                |
| Gestational hypertension, n (%)              | 3 (1.0)           | 0           | 0           | 0              |
| Preeclampsia, n (%)                           | 3 (1.0)           | 0           | 0           | 0              |
| Prior testing for gestational diabetes, n (%) | 8 (2.5)           | 0           | 0           | 0              |

BMI = Body mass index, DM = Diabetes Mellitus, HDP = Hypertensive disorder of pregnancy, SD = Standard deviation
**Supplementary Table S2. Missing values in maternal and neonatal outcomes results**

|                          | Total (N=422) | Controls N=282 Missing n (%) | DM N=37 Missing n (%) | HDP N=79 Missing n (%) | DM/HDP N=25 Missing n (%) |
|--------------------------|---------------|-----------------------------|-----------------------|------------------------|---------------------------|
| **Gestational age at delivery** | 168 (59.6)    | 24 (64.9)                  | 45 (57.7)            | 17 (68.0)              |
| **Maternal blood glycemia** | --            | 36 (97.3)                  | --                   | 23 (92.0)              |
| **Maternal blood pressure** |               |                            |                      |                        |
| Systolic BP              | 61 (21.6)     | 12 (32.4)                  | 8 (10.2)             | 4 (16.0)               |
| Diastolic BP             | 61 (21.6)     | 12 (32.4)                  | 8 (10.2)             | 4 (16.0)               |
| Preeclampsia, n (%)      | 49 (17.4)     | 9 (24.3)                   | 5 (6.4)              | 4 (16.0)               |
| Eclampsia, n (%)         | 49 (17.4)     | 9 (24.3)                   | 6 (7.7)              | 4 (16.0)               |
| Delivery mode            | 35 (12.4)     | 6 (16.2)                   | 3 (3.8)              | 4 (16.0)               |
| Small for gestational age, n (%) | 174 (61.7) | 24 (64.9)                  | 46 (58.9)            | 17 (68.0)              |
| Large for gestational age, n (%) | 174 (61.7) | 24 (64.9)                  | 46 (58.9)            | 17 (68.0)              |
| Birth weight (n=362)     | 44 (15.6)     | 7 (18.9)                   | 4 (5.1)              | 5 (20.0)               |
| Obstetrical complications | 40 (14.1)     | 7 (18.9)                   | 5 (6.4)              | 4 (16.0)               |
| Neonatal hypoglycemia, n (%) | n/a         | 12 (32.4)                  | 55 (70.5)            | 7 (28.0)               |
| Intravenous dextrose, n (%) | 0            | 0                           | 0                     | 1 (50)                 |
| Neonatal complications   | 45 (16.0)     | 6 (16.2)                   | 3 (3.8)              | 3 (12.0)               |

BP= Blood pressure, DM= Diabetes mellitus, HDP= Hypertensive disorders of pregnancy, SD= Standard deviation