

Diabetes In Pregnancy

Before Insuline (1921)

- ↑ M.M

- PNM 40-60%

After Insuline →

- ↓ MM

- PNM <5%

Incidence :

- IDD 1/1000

Very Common

- G.D 2-3%

IS/CO

E

Diseases

Numbers

Dx

Tx



Diabetes in pregnancy

□ Increase in prevalence

- increase number of women of childbearing age with pregestational diabetes type 2
- increase in the diagnosis of gestational D

Categories of diabetes encountered in obstetric practice

- ☐ Type 1 Diabetes
- ☐ Type 2 Diabetes
- ☒ Monogenetic Diabetes
- ☒ Mitochondrial Diabetes
- ☒ Secondary Diabetes
- ☐ Gestational Diabetes

Doc
said:

* The Next slides ximp

Monogenetic Diabetes (AD)

□ Maturity onset of the young

□ Single gene mutation----defect in pancreatic B-cell insulin secretion

□ Autosomal dominant

□ ~~Not~~ associated with obesity

Mitochondrial Diabetes

- Mutation in the mitochondrial DNA-----
defect in insulin secretion
- Associated with other medical problems
sensrineural deafness, Tendency to
stroke and lactic acidosis
- Develops in midtherties
- ~~No~~ obesity

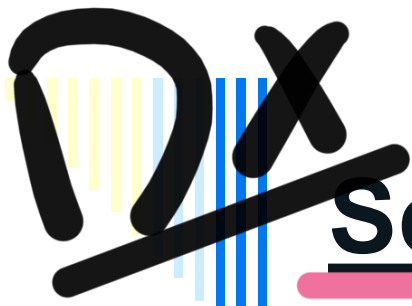


Secondary diabetes

Also

Associated with other medical conditions

Like pancreatitis, cystic fibrosis, Glucocorticoids
and other drugs.



Screening & Diagnosis

Screen

For all

CV2 only

45% have RF



Random Blood Sugar

-Booking & 28wks

7.2 or >mmol/L → GTT



Osullivan Test

50g(non fasting) at booking

if 1hr blood glucose >7.8mmol/L GTT



GTT (in JVH)



GTT (at 24w)

(next page)

10% → Have indication for GTT



20-25% Abnormal

45% of women with G.D have one or
more of the predisposing factors.



GTT-----Indications

- History of D in first degree relative
- Glucosuria 2 or > occasions (2nd fast.)
- Maternal BMI >30kg/m square.
- A previous baby wt 4.5kg or more.
- Congenital abnormalities, IUD, Ndeath
- Large for date -polyh. -prev.G.D
- Recurrent candidal vulvovaginitis



Three hours GTT (100gm)

You will be asked to drink a liquid that contains glucose, 100 grams (g) . You will have blood drawn before you drink the liquid, and again 3 more times every 60 minutes after you drink it

Fasting

< 95mg/dl

5.3mmol/l

1 hour

180mg/dl

10mmol/l

2 hours

155mg/dl

8.6mmol/l

3 hours

140mg/dl

7.8mmol/l

* الأرقام
محفوظة



75 gms OGTT at 24-32 wks

- Fasting 5.1mmol/L (91.8 mg/dl)
- 1 hour 10 mmol/L (180 mg/dl)
- 2 hours 8.5 mmol/L (153 mg/dl)



Pregnancy & CHO Metabolism

- ↓ sensitivity to insulin, ↑ with gest. D
- HPL *MCQ always at 24-26_w of preg (CV2 max at this time)*
 - Estrogen & Progesterone
 - Cortisol
 - Degradation of insulin by plac.

Effect Of Pregn. On Diab.

Control is more difficult:

- Lowered renal threshold. (may glucose be ↑ in urine) ^{Not really}
- Nausea & Vomiting early in preg. (risk hypoglycemia)
- Infection (e.g. UTI) -- (↑ Res. to insulin)
- Labour → Need glucose.
- Post partum → Req. of insulin.

* in post partum

We stop insulin if she was on it.

* after preg
we return to pre-preg dose

Effects of maternal hyperglycaemia

m/c anomaly: cardiac
m/spec: Caudal syndrome, Pathologic regression ↑ need to be screened for chromic OK

□ First trimester

Implantation----inhibits trophoblast differentiation

Embryogenesis---Activates the diacylglycerol

↑ protein-kinase C cascade increasing congenital defects

Miscarriage -----Increase premature programmed cell death of key progenitor cells of the blastocyst

(Apgar's)

↳ in poor control



Effects of maternal hyperglycaemia

□ Second Trimester

Endocrine pancreas---Stimulate fetal B-cells

Fetal growth----Stimulate fetal hyperinsulinemia that
results in growth acceleration seen
on U/S by 26 wks

↓
Macrosomia



Effects of maternal hyperglycaemia

□ Third Trimester

Fetal growth —A major fetal substrate an determinant for accelerated fetal growth

↑ *Macrofomia*

Adipose disposition----Stimulates hyperinsulinemia that promotes fat disposition including intra- abdominal fat.

Lung maturation---hyperinsulinemia delay lung maturation by inhibiting surfactant protein → *RDS* (*surfactant*)

Stillbirth---Is associated with defects in placental maturation that increase the risk of fetal hypoxia

↪ *caz polycythemia → thrombosis*

hypoxia + hyperglycemia → acidosis



Effects of maternal hyperglycaemia

□ Delivery

Birth trauma----causing accelerated fetal growth
shoulder dystocia—Trauma & asphyxia

□ Neonate

hypoglycemia, Hypocalcemia, Polycythemia

Hypomagnesemia, Cardiomyopathy, RDS

□ Adolescence/adulthood

Obesity---Intrauterine exposure predisposes to metabolic
syndrome independent of genetic susceptibility

Type 2 Diabetes

Other effect Of Diab. On Preg.

→ M/imp: Asymp bacteruria → ^{1/3 of them} pyelonephritis

Infection -UTI -Asym.bacteruria

Monilial vulvo vaginitis:

- ↑ Glucose content of vag. epith.
- Glucosuria

PET 8% - Renin&aldost.

- Angiotensin ~ Blood glucose.



Effect of Diab.-----cont.

Polyhydramnios: -25%

-foetal polyuria

(only if ↑
↑)

Preterm Labour

Perinatal Death:

- Unexplained IUFD
- Idiopathic RDS
- Congenital Abnormalities



Management

□ Preconception counseling

- 5 mg folic acid before conception and for 12wks
- Achieve the best possible HbA1c \leftrightsquigarrow \uparrow same time
- Ensure that all medications are safe for preg.
- Screened for possible eye and kidney diseases



Management

□ First trimester

- Combined Clinic. *(Multi doctors)*
- Dating scan *(US)*
- Screening for diabetic complications
- Screening for ~~non~~-diabetic morbidities
- Assessment and optimization of glycemia
(fasting 6mmol/l , 1 hour postprandial 7.8mmol/l)
- Advice on hypoglycemia prevention
- Experienced Dietitian.



Management

□ Second trimester

- Optimization of glycemic control
- Screening for congenital abnormalities
- Surveillance for medical/obstetric complications
- Assessment of fetal growth. (آخر الـ 2^{هـ} tri)

□ Third trimester

- Optimization of glycemic control
- Assessment of fetal growth
- Timing and mode of delivery

Obstetric Manag.-----cont.

-Delivery:

- Uncomplicated, well controlled,
and normal growth 40 wks.

- Bad obstetric history 38 wks.

-Mode of delivery:

- c/s is ~~not~~ indicated.

- insulin infusion -5% dextrose.



Obstetric Manag.-----cont.

-Induction of Labour: (same Normal)

-If unfavorable → PG.

-If favorable → ARM & Oxytocin.

-Aim → Delivery within 12hours.

-Insulin → 1/2 dose

-Hourly blood glucose.

-Postpartum → preg. dose.



Breast feeding

Family planning

-Breast feeding:

-  CHO by 50 gm/day.

- Oral hypoglycemic → contraindic.

-Family planning:

- Barrier methods -IUCD -OCP

- Sterilization & Vasectomy.