



Diabetes In Pregnancy

Before Insuline (1921)

- ↑ M.M

- PNM 40-60%

After Insuline →

- ↓ MM

- PNM <5%

Incidence :

- IDD 1/1000

- G.D 2-3%



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**



Monogenetic Diabetes

- 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

Associated with other medical conditions

Like pancreatitis, cystic fibrosis, Glucocorticoids
and other drugs.



Screening & Diagnosis

Random Blood Sugar

-Booking & 28wks

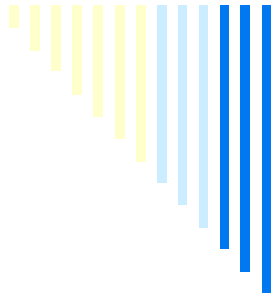
7.2 or >mmol/L → GTT

Osullivan Test

50g(non fasting) at booking

1hr blood glucose >7.8mmol/L GTT

GTT



GTT

10% → Have indication for GTT



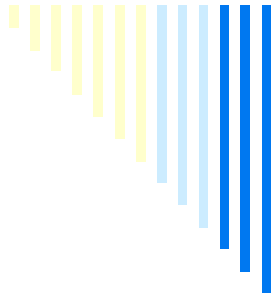
20-25% Abnormal

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)

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



75 gms OGTT at 24-32 wks

- Fasting 5.1 mmol/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 insuline, ↑ with gest.

- HPL

- Estrogen & Progesterone

- Cortisol

- Degradation of insulin by plac.



Effect Of Pregn.On Diab.

Control is more difficult:

- Lowered renal threshold.
- Nausea & Vomiting early in preg.
- Infection(e.g.UTI)--- ↑ Res.to insul.
- Labour → Need glucose.
- Post partum → ↓ Req.of insuline.



Effects of maternal hyperglycaemia

□ First trimester

Implantation----inhibits trophoctoderm 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



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



Effects of maternal hyperglycaemia

□ Third Trimester

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

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

Lung maturation---hyperinsulinemia delay lung maturation by inhibiting surfactant protein

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



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.

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

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
 - Ensure that all medications are safe for preg.
 - Screened for possible eye and kidney diseases



Management

□ First trimester

- Combined Clinic.
- Dating scan
- 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.

□ 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:

-If unfavorable → PG.

-If favorable → ARM & Oxytocin.

-Aim → Delivery within 12hours.

-Insulin → 1/2 dose

-Hourly blood glucose.

-Postpartum → prepreg. dose.



Breast feeding Family planning

-Breast feeding:

- **↑ CHO by 50 gm/day.**

- **Oral hypoglycemic → contraindic.**

-Family planning:

- **Barrier methods -IUCD -OCP**

- **Sterilization & Vasectomy.**