# HIV in Pregnancy and Childbirth

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AIDS first described in 1981

Causative agent in RNA retro virus

**HIV - 1** 

**HIV – 2** 

Most cases worldwide due to HIV -1

**Transmission** 

**Sexual contract** 

**Blood or blood** – contaminated products

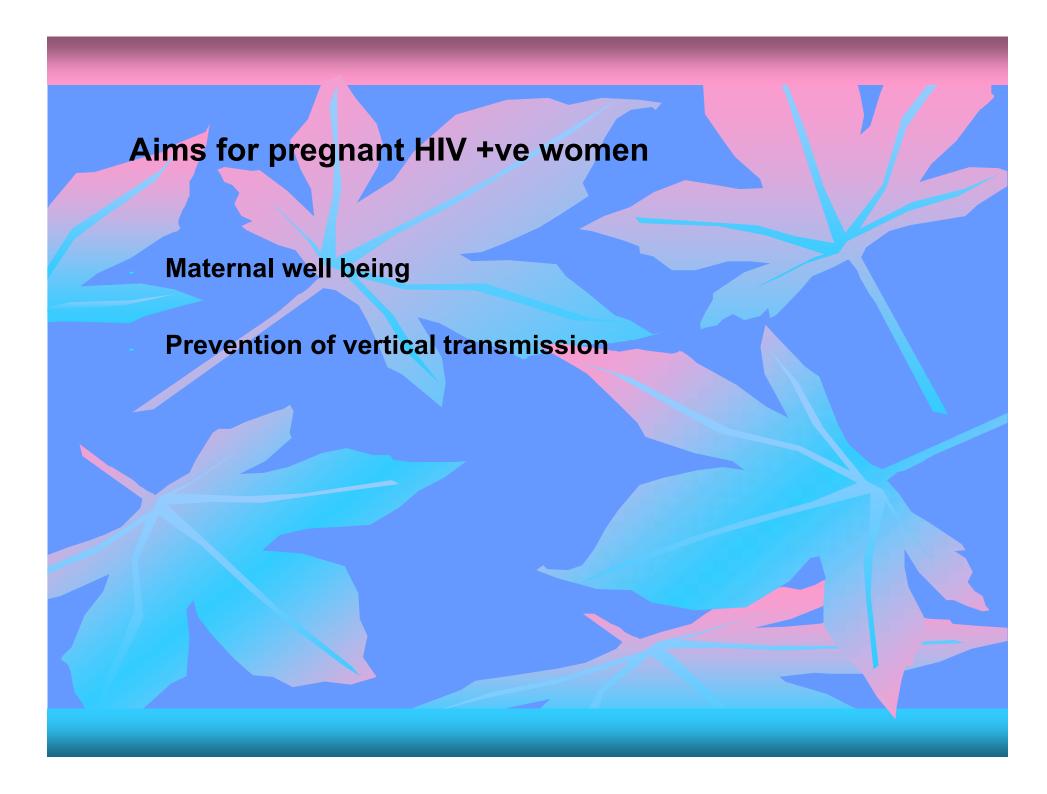
Vertical to fetus / baby from mother

Intra uterine: 20% before 36 weeks, 50% 36 wks - to delivery

**During delivery: 30%** 

Breast feeding: 30 - 40%

Risk of vertical transmission correlates with viral RNA levels but not absolutely



#### Perinatal transmission rates decreased

From 20 – 30% (1981 – 2000)

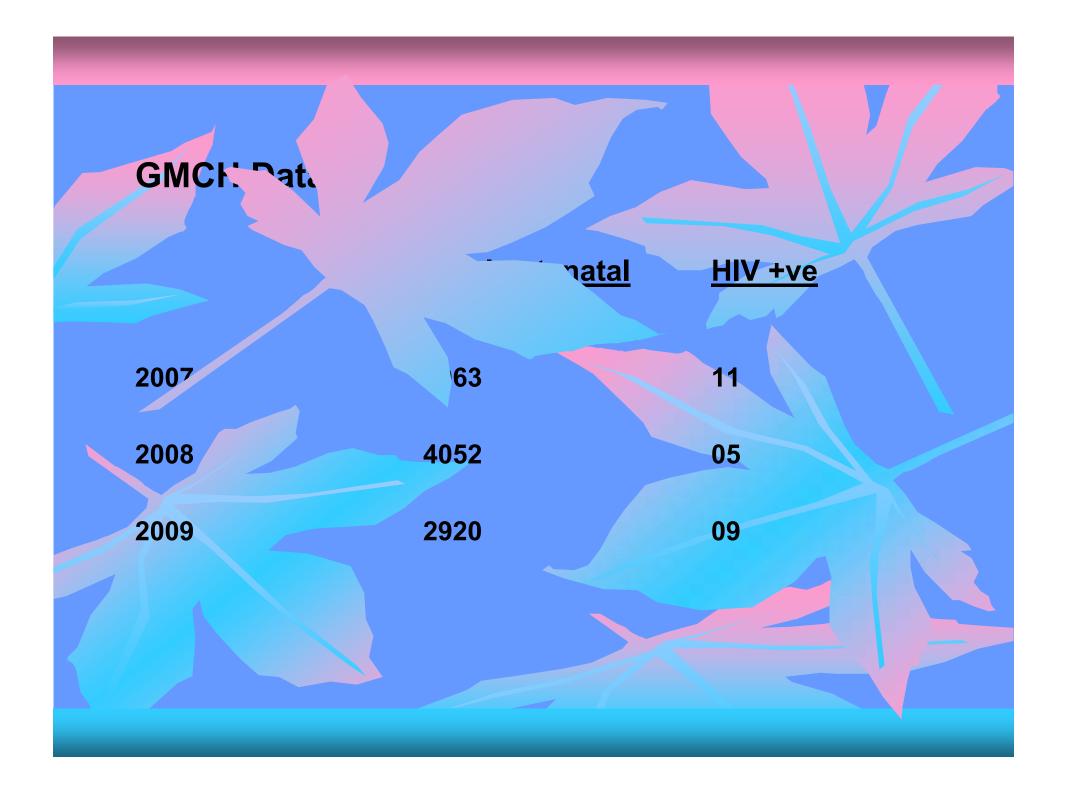
To 1 – 2% (2000 onwards)

www.WHO.int/hiv/topics/arv

In USA

100,000 women are infected – 6000 deliveries annually

19 million globally



## **Pregnancy**

HIV testing - Universal testing and right of refusal

- Test with Enzyme Immuno Assay (EIA)
- Confirm with Western Blot if EIA is repeatedly reactive

**Indeterminate W.B.** 

Repeat + test sexual partner

# **Effect of Pregnancy on HIV**

No effect on HIV disease progression

No difference in CD4<sup>+</sup> Lymphocytes

or

**HIV RNA trajectory** 

or

Clinical AIDS rate with one / multiple pregnancies

## **Effect of HIV on pregnancy**

In developing countries, studies have shown increase in incidence of preterm birth

- Low birth weight
- IUGR
- Still births
- and Infant deaths

And risk was inversely proportional to CD4<sup>+</sup> lymphocyte count.

Zidovudine monotherapy also associated with increased risk of preterm birth and LBW babies.

## **Management Options**

#### Ideal:

**Prepregnancy testing and counselling** 

If positive and requiring therapy in non-pregnant state

(CD4+ count < 350 cells / μl

HIV RNA level > 55000 copies /ml)

Should get therapy <u>without</u> Efavirenz. Pregnancy to be delayed till HIV RNA levels undetectable.

Single factor most strongly related to perinatal transmission is HIV RNA levels.

#### **Maternal**

It patient already HIV + diagnosed with criteria for ART (Anti-

retroviral therapy)

CD4 count ≤ 350 µl

HIV RNA 55000 copies / ml

ART (HAART) started / continued in 1st trimester with

pregnancy - safe drugs

**Discontinue Efavirenz (teratogenic)** 

# **Antenatal Testing**

In USA

Opt out strategy for testing

In India

Opt in

If rate is ≥ in 1000 pregnancies, or patient is high-risk for HIV HIV testing is to be repeated in 3<sup>rd</sup> trimester.

High risk for HIV

Injection drug use

Multiple sexual partners

Suspected / known HIV + sexual partner

Any other STD in patient



#### **Antenatal / Prenatal**

- If HIV + status found at pregnancy
- Counselling
- MTP is offered
- CD4+ lymphocyte testing and HIV RNA is done
- Baseline RFT & LFT
- Hb, TLC, DLC
- If criteria for treatment start therapy in 1st trimester

# **Antiretroviral Therapy**

For Antiretroviral naive patients : (with CD<sub>4</sub> < 350 & RNA ≥ 55000)

200 mg Lopinavir, 50 mg Ritonavir combination:

Ritomax forte 2 Cap. BD

Or

- Nelfinavir (250 mg tabs) 750 mg tds)

**Plus** 

Zidovudine Lamivudine combination 300 mg 150 mg

# For all other pregnant women

Start in 2<sup>nd</sup> trimester

Zidovudine + Lamivudine 1 Tab. BD

300 mg 150 mg

**Duovir (Rs. 205 for 10)** 

Combivir (Rs. 820 for 10)

This regime should contain Zidovudine

I/V zidovudine should be given during labour

If HIV RNA level < 1000 copies / ml then monotherapy with Zidovudine can be given.

Do not chose Nevirapine if CD4<sup>+</sup> count >250 as risk of hepatotoxicity is very high.

#### Surveillance for

Symptoms of nausea, vomiting, muscle cramps

New symptoms every 2 – 4 weeks

LFT and electrolytes every 2 – 4 weeks at beginning of therapy (1 – 2 months)

Then every month in 3<sup>rd</sup> trimester

**CD4**<sup>+</sup> lymphocyte count every 3 months during pregnancy

HIV RNA levels every 4 weeks after starting therapy till undetectable and then every 3 months (at least 1 log fall after 4 – 8 weeks of starting therapy)

GCT at 24 - 28 weeks as scheduled.



Rapid HIV test so that peripartum prophylaxis can be given

Confirm later – W.B. or ELISA

## Intrapartum

If detected only during labour

Nevirapine 2 tabs to mother before delivery

Nevirapine Syrup 2 mg / kg to baby after 48 hrs of birth

If patient already on Zidovudine & Lamivudine

I/V Zidovudine 2 mg / kg in one hour I / V

Then 1 mg / kg / hr infusion till delivery

Neonate: 2 mg / kg 6 hrly x 6 wks start 8 – 12 hrs after birth



- Amniocentesis
- Scalp electrode for fetal monitoring
- Early ARM
- Scalp blood testing

C.S.: C.S. reduces transmission (0.43 adjusted odds ratio)

If done before labour and rupture of membranes (ROM)

**Transmission in C.S. = 1.8%** 

Vaginal delivery = 10.5%

#### **Indications for LSCS**

If viral load unknown or

> 1000 copies / ml at 36 wks gestation

If she has not taken anti HIV medication during her pregnancy

Not had any prenatal care till 36 wks

Should be done before rupture of membrane

# **Breast feeding**

Increases risk of transmission by 15 – 20%

WHO recommendation for USA - avoid

For developing countries

**Encourage breast feeding if hygienic top feeding not feasible** 

- Should have exclusive breast feeding or exclusive top feeds

# **Contraceptive options**

**Barrier contraception** 

IUCD if without severe immune compromise and low risk of sexually transmitted infection.

Hormonal contraception can be used sp depot provera ART drugs reduce blood levels of estrogens so CoC pills may not be effective and may cause break-through bleeding

