Topics Learning in PIH

- Prevalence &Terminology & Definition
- Etiology & Pathology & Physiopathlogy
- Management Mild & Severe PIH
- Management of HELLPS & Eclampsia
- *Prevention*
- *Outcome*

Prevalence

- 3-7 % in general population
- *Increased in*
  - *Primigravida*
  - *Advanced Age*
  - *Multiple Gestation*
  - *TRD & ect*

Which Etiologies Are Accepted

- *Unknown ?!*
- *Immunological Factors?*
- *Familial*
- *Expose to chorionic villi (TR cells)*
- *Genetic Factors?*
- *Multiple Theory ?*

Factors Decreased PIH

- Previous pregnancy by same partner
- Previous Abortion
- Exposure to seminal fluid
- After previous blood trasfusion
- After leukocyte immunization
- In consanguineous marriages

Factors Increased PIH

- *Primigravid state*
- *Increased trophoblastic mass*
- *Different partner*
- *Pregnancy after Egg Donation*
- *Previous use barrier contraception*

RISK FACTORS PIH

- *APS: in pregnancy complications including: PIH, fetal loss, maternal thrombosis and etc.*
- *Coagulation abnormalities risk factors*

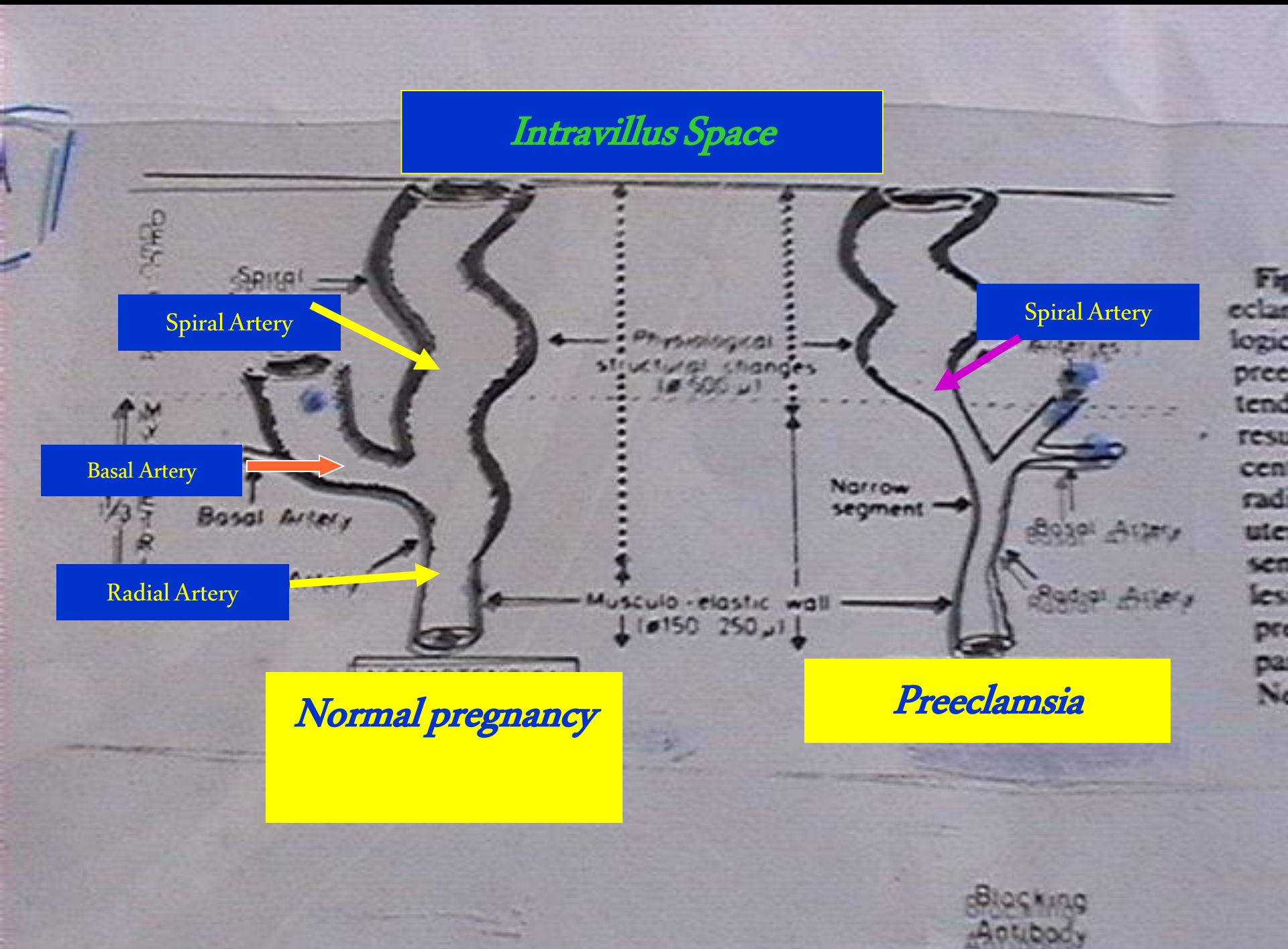
  -protein C or S deficiency,

  - factor V Leiden mutation,

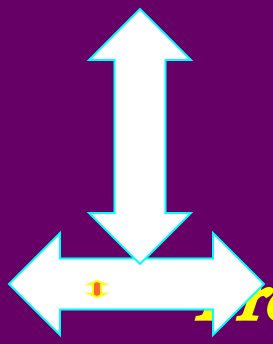
  -hyperhomocysteinemia

Classification

- *Mild PIH (Mild Preeclampsia)*
- *Severe PIH*
- *Eclampsia*
- *Chronic Hypertension with Superimpose PIH*
- *Gestational Hypertension*
- *HELLP SYNDROM*


Intravillus Space
Spiral Artery
Spiral Artery
Basal Artery
Basal Artery
Radial Artery
Physiological structural changes
Narrow segment
Basal Artery
Radial Artery
Musculo - elastic wall
Normal pregnancy
Preeclamsia

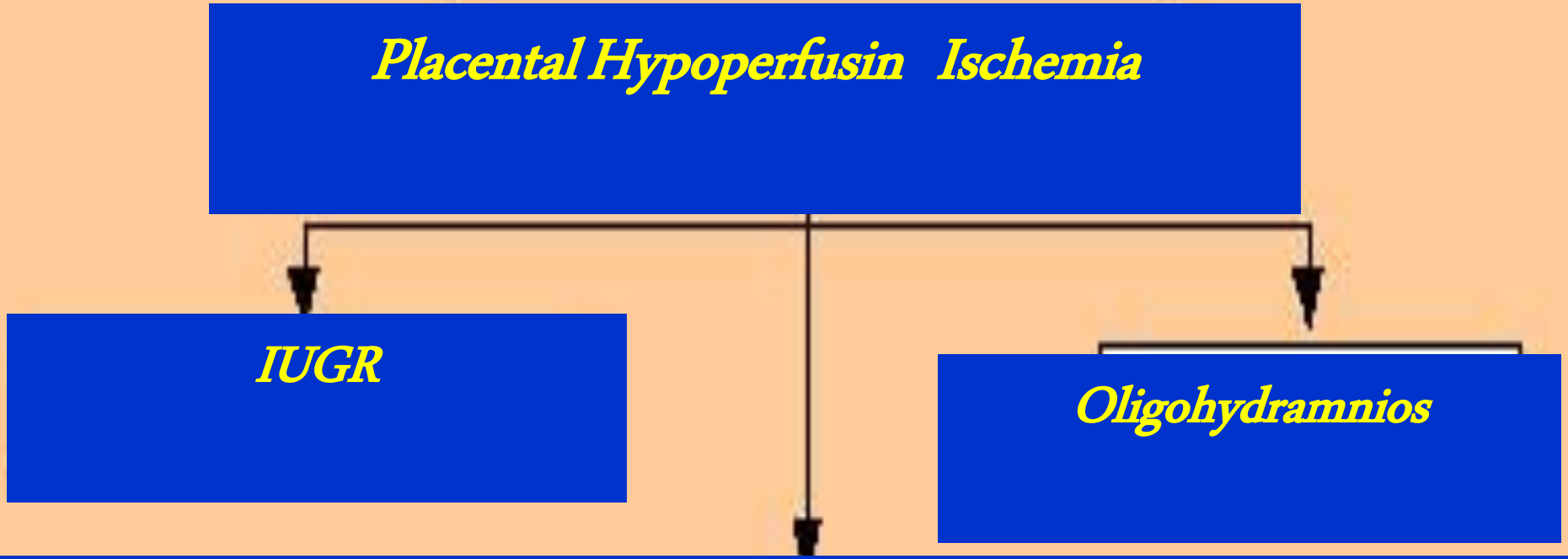
Normal Pregnancy

TXA2  *Prostacyclin*

IF TXA2 > *PGIH*

Model for Pathgenesis PIH

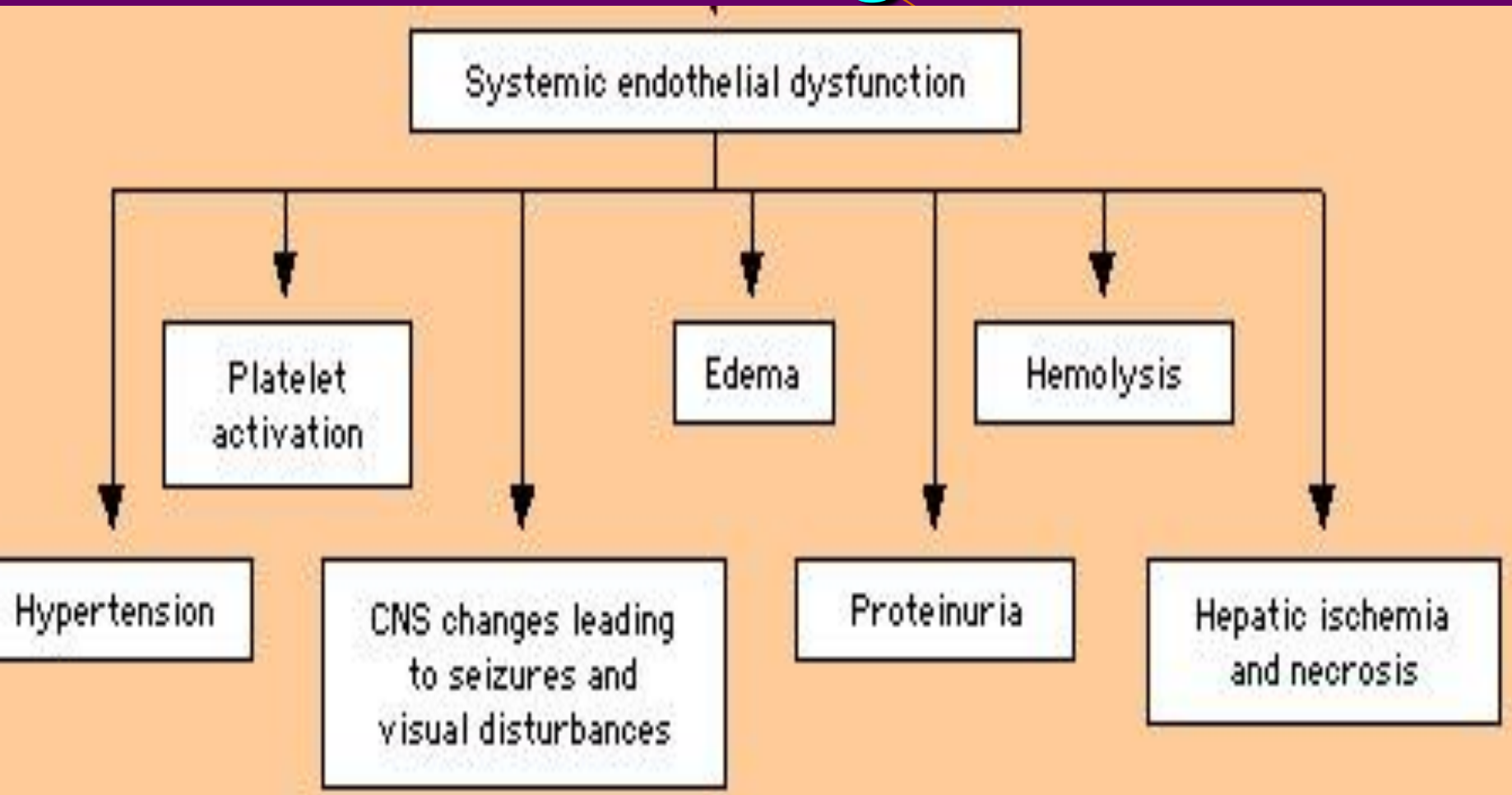
Taherian MD



Increased secretion of sFlt-1,decreased

VEGF,PIGF and other mediators of

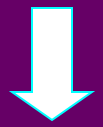
Model for Pathgenesis PIH



Pathology

- *Renal: GFR & RBF decreased*
- *Liver: LBF Gli… Capsul*
- *Brain: BBF Edem… petheachia*
- *Vascular: vasospasm,hypovolemia*
- *Hematology:Coagulation,FDP*

  DIC, Platlate



Terminology & Definitions

- *Hypertension: 140/90*
- *Proteinuria: =>300 mg/24h urine*
  > + protein
- *Edema*

Aim of Management PIH

- Complete Restoration of Health of Mother
- Prevent of Convulsion
- Birth of Survive Infant
- Termination of Pregnancy with at least Trauma to Mother or Fetus

Blood pressure goal

Many Clinicians Consider a reasonable goal to be

Systolic 140 to 155 mmHg

Diastolic of 90 to 105 mmHg

Definitive treatment of preeclampsia

is delivery,

which is always

beneficial for the ***mother*** not for fetus

Roles of Rest in Mild PIH

There was no demonstrable benefit or risk associated with restricted activity in patients with mild (not severe) hypertension

Severe PIH

- *BP>160 / 110mg*
- *Protenuria > 5 gr /24 urine*
- *Olyguria < 500ml/24 h*
- *Visual Disturbance*
- *Pulmonary Edema*
- *Epigastric pain*
- *HELLPS 10%*

Mechanism (MgSO4)

1-Blocks neuromuscular transmission

2-Decreases end-plate sensitivity to depolarizing action of acetylcholine

3-CNS depressant

4-Some vasodilatation Utroplacental BF

Management of Severe PIH

- Stabilization
- Prevent Convulsion
- Control of Hypertension
- Termination of pregnancy with
  - Survive Fetus
  - C/S (Obstetrical indication)

Differential Diagnosis of Severe PIH

- Hellps Syndrom
- TTP
- Flare Up of Lupus
- HUS
- Chronic Hypertension with suprimposed PIH

Preeclampsia versus exacerbation of underlying renal disease

- *Exacerbation of renal disease:*
  1-Low complement levels in a patient with systemic lupus erythematosus
  2-U/A consistent with a proliferative disorder (eg, red and white cells and/or cellular casts), findings which are inconsistent with preeclampsia.

Complications Undelivered PIH

- *Seizures*
- *Abruption*
- *Thrombocytopenia,*
- *Cerebral hemorrhage*
- *Pulmonary edema*
- *Liver hemorrhage*
- *Renal failure*

Antihypertensive Agents

1-Hydralazine

2-Labetalol

3-Nifedipine :

Which drugs prefer to using in Hypertension in Pregnancy

- *Methyldopa*
- *Labetalol.*
- *Nafedipine or amlodipine A long acting calcium channel blocker*
- *Hydrolazine*

Adverse Effects of hydrolazine on Fetal Heart Rate

- *Abnormal FHR patterns in the 6 hours after treatment*
- *Abnormal FHR in labor*
- *FHR decelerations*
- *Late decelerations during tracing*
- *C/S increased as a result of fetal distress*

Side Effects of Hydrolazine

- More maternal side effects were seen than with labetalol
- More headaches (raising the issue of imminent eclampsia),
- Hypotension
- Palpitations and maternal tachycardia

What is Labetalol ?

- Labetalol :is a alfa & beta blockers
- Oral dose : 100 mg BID
- Maximum dose 2400 mg/day
- 800 mg TDS up to 2400
- IV dose : 20 mg IV followed at 20 to 30 minute intervals by 20 to 80 mg up to a maximum total cumulative dose of 300 mg
- Constant infusion of 1 to 2 mg/min can be used instead of intermittent therapy

PREVENTION PREECLAMPSIA

Pharmacologic
Preventive Routes

1-Low Dose Aspirine ?

2-Calcium Supplements?

3-Nitric Oxide(NO) :vasodilator ?

4-Heparin ?

4-Antioxidant :Vitamin C & E ,A?

ASA Effect

Alter Prostonoid Biosynthesis

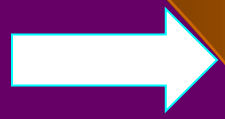
Inhibing action Cyclooxygenase(COX)

Absolute Decreased TXA_2

Relative Increased Prostacyclin

Calcium Supplements

Calcium used since 1980

Low Calcium 

Release Parathyroid H. & Renin

thereby  *intercellular calcium vasoconstriction (high BP)*

Use of Calcium Supplement

Reduce parathyroid H

Reduce intracellular calcium

Thereby smooth muscle relax

Vasodilation

Vitamin E & C

- *Oxidative stress :*
- *Cause endothelial cell dysfunction.*
- *Antioxidants Vit.E,A can Prevent These*

What is the Eclampsia ?

Any pregnant woman with Convulsion

Should be termed Eclampsia

Except brain disease

INCIDENCE

- *4—5 per 10,000 pregnancies in UK and USA, accounting*
- *10 % of maternal deaths.!!*

Most serious complications of Eclampsia

- *Cerebral oedema*
- *Cerebral hemorrhage, coma*
- *DIC, ARDS,*
- *Multi-organ dysfunction*
- *intra-uterine fetal asphyxia / death.*

Management of Eclampsia

- *Stabilization*
- *Control of Convulsion*
- *Control of Hypertension*
- *Termination of pregnancy*

Atypical Preeclampsia