Diagnostic Needs: Pre-eclampsia Diagnosis and Management

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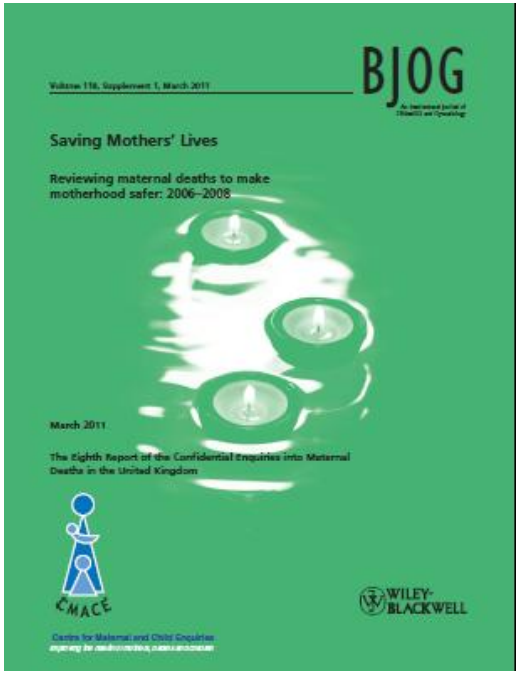
Pregnancy Management

- >800,000 pregnancies per year in UK
- Natural process
  - Involves management of 2 people
  - Maternal & Fetal Health & Wellbeing
- Majority of the time progresses normally and safely

Complications do Occur

- Women still die during pregnancy or suffer life-threatening complications

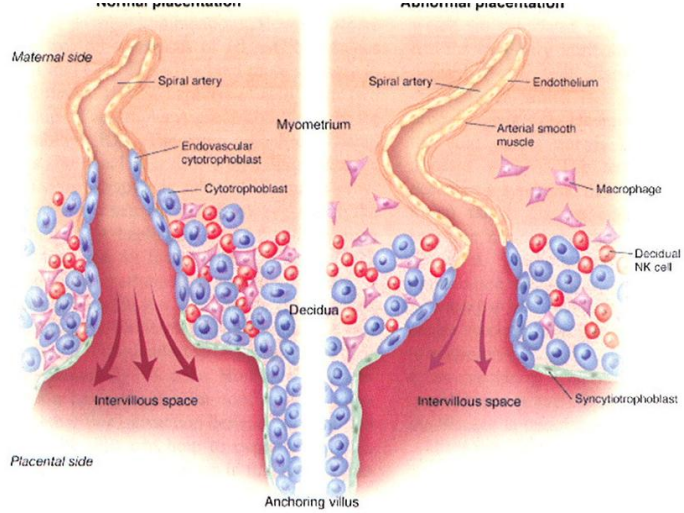
- Confidential Enquiry into Maternal Death in the UK published in 2011 (2006-2008) BJOG
    - 261 women died
    - Top 3 Direct causes:
        - Sepsis
        - **Pre-eclampsia & eclampsia**
        - Thrombo-embolism



Pre-eclampsia is a leading cause of maternal death, preterm labour , neonatal complications & stillbirth

What is Pre-eclampsia?

- **Multi-systemic disorder**
  - Can occur anytime from 20 weeks to term
- **Abnormal vascular response to placentation** – placental implantation is too shallow
  - Vascular resistance
  - Hypoxic placenta
  - Endothelial cell dysfunction
- **Clinical symptoms**
  - **Maternal Syndrome**, hypertension (140/90), proteinuria (>300mg/24h), epigastic pain, migraine, visual disturbance
  - **Fetal Syndrome**, FGR, reduced amniotic fluid, abnormal oxygenation



There is no treatment, only delivery of the placenta.

Diagnosis is often Uncertain

- Pregnancies need to be screened and monitored regularly to identify women at risk
- **High Blood pressure and protein in urine** is the gold standard for diagnosis
- But PE is a complex syndrome.....
- Can be fast moving
- Presents with many different symptoms

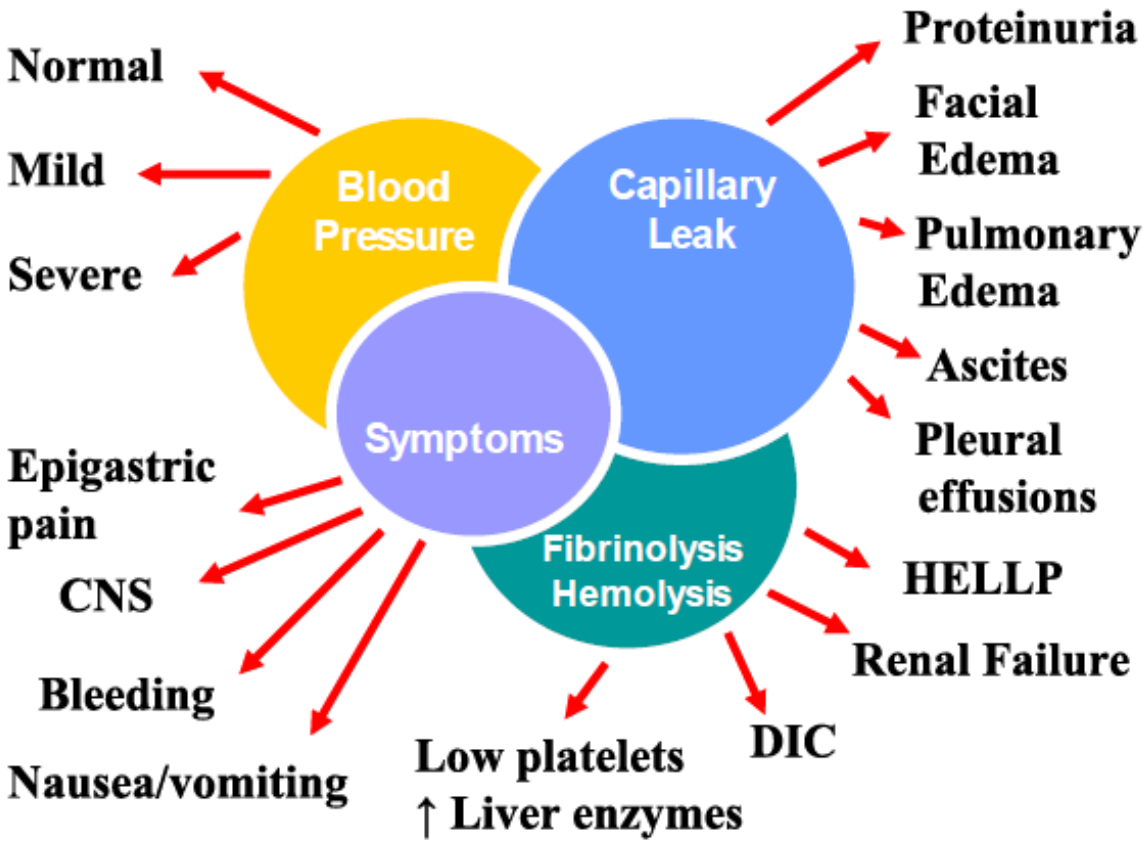
Only

38%

of women had both hypertension and proteinuria before the development of eclampsia.

Douglas & Redman (1994) BMJ
Knight (2007) BJOG

Is it Pre-eclampsia?



Sibai. Diagnosis and management of a typical preeclampsia-eclampsia. Am J Obstet Gynecol 2009.

These are late symptoms of the disease – women can present with any/ just one etc. May be masked by another condition.

What are the Clinical Needs?

Research conducted with Consultants & Midwives/Nurse Practioners in >10 countries, there are a common set of needs:

1. **Greater Accuracy in Diagnosis & Prognosis** - 'suspicion of PE' is the most common reason for iatrogenic preterm delivery and labour induction.
2. **Getting Patients on the Correct Clinical Pathway quickly** – rule-in/ rule out
3. **Saving costs -** Expense of antenatal monitoring (clinic visits, fetal ultrasound) and inpatient admissions.
4. **Results at the Point of Care** – to enable midwives to quickly manage patients.
5. **Improving the patient experience** – do they really need to be admitted/ what did I do wrong? Preterm PE has huge impact on the patient and family.

New Biomarker – PLGF
Delivering against the Clinical Need

The Triage® MeterPro™ Platform Placental Growth Factor (PLGF) - ***Important new test for Placental Dysfunction***

- **Greater accuracy in diagnosis and prognosis –** high NPV (96%) and PPV (94%) for delivery in 14 days

- **Clinical algorithm allowing Risk Stratification of patients with suspected PE (<35 weeks)**
  - Highly Abnormal - <12 pg/ml
  - Abnormal - >12 <100pg/ml
  - Normal - >100 pg/ml

- **Cost savings -** identify patients with low risk for delivery ; accelerate diagnosis

- **Point of care –** results in 15 minutes

- **Patient experience** – faster diagnosis/ improved communication/ less time in hospital

From the Experts

"Pre-eclampsia has been a daily enigma for us. At last we have a potential test that can accurately risk discriminate, and provide some logical direction to our clinical decision making. **To me, this is the single most important advance in managing the condition in the last decade."**

Professor Andrew Shennan
Kings College London
UK PELICAN STUDY PI

Thank you!

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