Making sense of medical obstetric complications

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Maternal mortality UK 2003-16

Direct and indirect maternal death rate
P-value for trend over time = 0.002

Indirect maternal death rate
P-value for trend over time = 0.018

Direct maternal death rate
P-value for trend over time = 0.009

Mid-year for each three year period

- Direct deaths
- Indirect deaths
- Total direct and indirect deaths

Rate per 100,000 maternities
Causes of maternal death 2014-16

In 2014-16 9.8 women per 100,000 died during pregnancy or up to six weeks after childbirth or the end of pregnancy. Most women who died had multiple health problems or other vulnerabilities.

- Cardiac disease
- Thrombosis & thromboembolism
- Other indirect
- Neurological
- Psychiatric
- Sepsis
- Haemorrhage
- Amniotic fluid embolism
- Malignancies
- Pre-eclampsia
- Early pregnancy deaths
- Anaesthesia

Rate per 100,000 maternities
Importance of pre-existing medical conditions

- Overall 76% of women who died had co-existing medical problems (including cardiac but excluding obesity)
- 85% of indirect deaths
- 66% of direct deaths
Solutions

• If we are going to reduce maternal mortality and morbidity the status quo is not enough
Multidisciplinary Teams

The information presented on this slide is based on the recommendation of the Speaker.
Case 1

• 39 yr old asian, 37 weeks pregnant
• c/o dizziness and epigastric pain
• o/e sweaty, BP 94/68, HR 84
Case 1: which of the following are appropriate?

A. Troponin
B. Thrombolysis
C. Transfer to catheter lab
D. Primary angioplasty
E. Aspirin
F. Clopidogrel

What would you do if the coronary angiogram was normal?

If normal coronaries consider CMRI.

Bubble test also safe in pregnancy
Case 2

35 year old
1 day post first normal vaginal delivery
C/O chest pain
Obstetric SHO requests CTPA
Medical registrar asked to review - told CXR normal
Epilepsy

- The death rate from epilepsy in pregnancy (0.40 per 100 000) is now higher than the death rate from hypertensive disorders in pregnancy (0.38 per 100 000)

Managed in joint clinics
Ischaemic Stroke

Rare
0.03 per 100 000 maternities

Neither pregnancy, caesarean section delivery nor the immediate post-partum state are absolute contraindications to thrombolysis (intravenous or intra-arterial), clot retrieval or craniectomy.

Managed in acute setting
Differential diagnosis of seizures in pregnancy

• Eclampsia
• Epilepsy
• Cerebral venous thrombosis
• Thrombotic Thrombocytopenic Purpura
• CVA / ICH / SAH / SOL
• Meningitis
• Drug / ETOH withdrawal
• Hypoglycaemia / hypercalcaemia / hyponatraemia
• Related to dural puncture
Seizures in Pregnancy

• A first seizure in pregnancy that cannot readily be attributed to eclampsia or epilepsy warrants investigation with CT or MRI scan of brain.

Ray JG et al JAMA. 2016

Association Between MRI Exposure During Pregnancy and Fetal and Childhood Outcomes.

• First trimester MRI no risk of harm to the fetus or childhood
• Gadolinium MRI associated with an increased risk of rheumatological, inflammatory, or infiltrative skin conditions
A woman booked with a haemoglobin of 90 g/L. Initial tests of ferritin, B12 and folate were reported to be normal. Her anaemia progressed during pregnancy despite oral iron but was not further investigated. She became breathless in the second trimester. In her third trimester she was noted to be tachycardic. She had a normal delivery but became unwell immediately afterwards and was suspected to have sepsis. However, no evidence of infection was found and she was discharged on day four. She presented repeatedly to her GP and the Emergency Department over the next few weeks with persistent lethargy and a cough. She was noted still to be anaemic. Shortly before her death she presented again to a different GP with oedematous legs and was referred to hospital. On admission the woman was diagnosed to have a pericardial effusion, cardiac valve disease and SLE. Her condition deteriorated with respiratory failure and she died a few days later.

Lack of a lead professional after delivery and poor communication and handover to her GP. Presented repeatedly to different practitioners in the postpartum period, no-one recognised this as a ‘red flag’ and no-one recognised how ill she was until she was in extremis.
Solutions

• If we are going to reduce maternal mortality and morbidity the status quo is not enough

• Joint obstetric / specialist clinics are necessary but not sufficient
Solutions

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• Improve maternal medicine training for obstetricians
Solutions

• If we are going to reduce maternal mortality and morbidity the status quo is not enough
• Joint obstetric / specialist clinics are necessary but not enough
• Improve maternal medicine training for obstetricians
• Improve obstetric medicine training for physicians (and stop them recommending CS)
• Train more obstetric physicians
Need for a ‘project manager’

In pregnant or postpartum women with complex medical problems involving multiple specialities, the responsible consultant obstetrician or physician must show clear leadership and be responsible for coordinating care and liaising with anaesthetists, midwives, other physicians and obstetricians and all other professionals who need to be involved in the care of these women.

When a woman is transferred to level 3 / intensive care, daily consultant obstetric and physician involvement must remain to ensure continuity of care, even if only in a supportive role, until such time that the woman is ready to be repatriated to the maternity unit.

Adapted from RCOG Green-top guideline 64b
Role of Obstetric Physicians

- Complimentary
  Not *instead* of specialist physicians or maternal medicine obstetricians but *as well as*
- Project Manager
  Joining the dots
- Translator
- Multiple co-morbidities
- Pre-pregnancy counselling- MEDICATIONS
- The rare stuff
  AFLP / ILD
- The acute stuff
  ? PE / pulmonary oedema / headache / seizure

We need more obstetric physicians to train obstetricians and physicians
Hierarchy of risk aversive behaviour: biologics in pregnancy

Gastroenterologists
Continue in pregnancy

Rheumatologists / Neurologists
Stop at conception

Dermatologists
Stop 6 months prior to conception
We need
Maternal medicine networks

No-one questions or doubts or had difficulty accepting the need for:

• Neonatal networks
• Fetal Medicine networks

If we are going to impact on indirect deaths from medical conditions we need Maternal Medicine Networks!!
We are updating our ambition to **halve the rates of stillbirth, death of newborns, maternal death and brain injuries caused during or shortly after giving birth** by bringing it forward 5 years to 2025.

Today we are announcing new measures, including:

- Setting out a new ambition to reduce the rate of premature births from **8% to 6%** by **2025**
- More **rigorous investigation** into cases of stillbirths, death of newborns and suspected baby brain injuries
- A network of **maternal medicine specialists** across the country to care for pregnant women with significant health conditions
- Looking into expanding the **powers of coroners** to investigate stillbirths
Networked maternal medicine

MBRRACE-UK found that in 2012-14, 51 women in the UK, equivalent to more than a quarter of women who died during pregnancy or up to six weeks after pregnancy, died from a cardiovascular cause. This represents the leading cause of maternal death in the UK and there has been no decrease over the last four reporting periods. Similarly, there has been no decrease in the numbers of women dying from cancer. Preventing these women from dying is essential in order to continue to reduce the maternal mortality rate. A clear message that emerges from MBRRACE's confidential enquiries into maternal deaths is the importance of multi-disciplinary care for these women cross many medical specialties in addition to obstetrics, midwifery, anaesthetics and critical care.

With a view to improving maternal outcomes, NHS England has been working with the Women’s Health Clinical Reference Group and others to develop a plan to introduce a network of maternal medicine specialists across the country to care for pregnant women with significant health conditions.

The Department of Health will provide funding over three years to train 12 consultant physicians as ‘Obstetric Physicians’ to be able to establish networked maternal medicine across England.

The Obstetric Physician together with an Obstetrician trained as a Sub-Specialist in Maternal Medicine will provide expert care for pregnant women with complex medical problems. They will also provide region-wide leadership and expertise across the whole network to help ensure there is early recognition of problems and access to best practice care.
Key improvements needed

• There remain multiple opportunities to reduce women’s risk of complications in pregnancy through early and forward planning of the care of women with known pre-existing medical and mental health problems

• Provision of appropriate advice and optimisation of medication prior to pregnancy

• Referral early in pregnancy for the appropriate specialist advice and planning of antenatal, intrapartum and postnatal care

• Effective postnatal provision of advice concerning risks and planning for future pregnancies
We need better pre and post pregnancy care!

“It is the responsibility of all professionals involved in the care of women of reproductive age with co-existing medical problems, including obesity, whatever their professional background and medical specialty, to provide pre- or post-pregnancy advice and contraception.

Clinicians without the necessary expertise to provide such counselling should refer women for specialised pre-pregnancy and/or antenatal services”
Words are important!

‘You cannot get pregnant while taking this drug

Oh good I can stop the pill!
Words are important!

‘You should not get pregnant while taking this drug

Oh 😞. I better start taking the pill regularly!
**Forward planning works**
For women with physical and mental health problems:

Before pregnancy, plan contraception as well as the safest medication.

Do not stop medication in early or later pregnancy without consulting a specialist.

Take account of changes which occur in the postpartum period and change medication accordingly. Plan for contraception as well as the next pregnancy.

Think about special medication considerations around the time of labour and birth.
RCP course, Nov 13-15th 2019

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E-learning: