Incidence, Mortality and Morbidity of Pre-eclampsia & Eclampsia

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Definition, Aetiology

• Pre-eclampsia: Blood pressure elevation and proteinuria
• Eclampsia: Above findings and convulsions
• Aetiology: Unknown
• Incidence of pre-eclampsia: 2-8% of all pregnancies
Why is it important?

Pre-eclampsia and eclampsia

• high morbidity/ mortality rates
• probably accounts for more than 50 000 maternal deaths worldwide each year
• is a multisystem disorder with adverse effects on the fetus
• long-term effects in the mother and the premature or growth impaired fetus have adverse impact on health systems
Objective

• To provide recent data on incidence/prevalence of pre-eclampsia and eclampsia in developing and developed countries
• To provide up-to-date data on maternal and fetal morbidity/mortality estimates due to pre-eclampsia and eclampsia
• To provide up-to-date data on effective interventions for prevention and treatment of pre-eclampsia and eclampsia.
Methods

• To assess the current literature the search was restricted to 1990–2002
• Data collected for the WHO Systematic review of incidence/prevalence of maternal mortality and morbidity
• Pubmed (Medline)
• Articles that were not published in English and that did not have a definition for pre-eclampsia or eclampsia were excluded
Results

187 articles identified
(Key words: pre-eclampsia, morbidity, mortality)

Excluded by title, abstracts.
153

Full text evaluation
34 articles

Included
12
Types of studies

• 5 hospital-based descriptive studies with varying objectives (5 retrospective, 1 both)
• 1 population-based cross-sectional study
• 6 randomised controlled trials on prevention and treatment strategies
Definition of the disease

- All of the studies used clear definitions but they were not consistent. (Definition made by the ACOG, U.S. Consensus group, ASCS, various authors were used)
- The review confirms the widespread variations in the definitions for the disorder
Definition of the diagnostic procedure

• 10/12 did not describe the diagnostic procedure for blood pressure measurement
  – 1 used Vth Korotkoff sound
  – 1 used IVth Korotkoff sound

• Proteinuria: Mainly dipstick analysis was used - the concentration of urine can affect the results
Incidence

• Different denominators were used for incidence, maternal and fetal mortality rates (No of pregnancies, deliveries, mothers)

• Highest rate for eclampsia: 0.8% (Colombia)

• Highest rate for pre-eclampsia: 7.1% (Zimbabwe)
Maternal and fetal morbidity

- Same pattern of complications was seen in developing and developed countries
- Mother: multisystem involvement
- Fetus: IUGR, low Apgar score, admission to NICU.
- The rates could not be compared – inconsistent definitions
Maternal and fetal mortality rates

• Maternal mortality rates:
  – In pre-eclampsia highest rate 0.4% (Magpie trial, multicentre, mainly developing countries)
  – In eclampsia highest rate 6.1% (Colombia) and lowest 1.8 % (UK)

• Perinatal mortality rates:
  – Pre-eclampsia: highest rate 11.5% (Magpie trial)
  – Eclampsia: highest rate 30.7% (The collaborative eclampsia trial conducted in developing countries)
Prevention

**Low-dose aspirin**
- studies have not shown beneficial effects on the incidence, mortality and morbidity rates

**MgSO4**
- in severe pre-eclampsia significantly reduces eclampsia,
- may reduce maternal mortality
- has no effect on fetal morbidity/mortality rates
Treatment

• MgSO₄ versus diazepam or phenytoin:
  – significantly reduces recurrent convulsions
  – may reduce maternal mortality
  – Similar effect on
    • maternal morbidity
    • fetal morbidity/mortality
Conclusion

• Pre-eclampsia and eclampsia remains as continuing problem worldwide
• Universal definitions for the disease and the diagnostic procedure should be introduced
• MgSO4 should be available in the treatment regimens for severe pre-eclampsia and eclampsia.
• Further well designed multicentric large-scale studies are needed to understand and reduce the incidence and the adverse effects of this disorder