Ultrasonography: Recommendations for its appropriate use in routine antenatal care in Nigeria

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Introduction

- Ultrasound (USS) was introduced for therapeutic purposes over 50 years ago.
- First diagnostic use in neurosurgery.
- Ian Donald introduced USS into obstetrics in 1958.
- Early machines were large and used by specialists.
- 40 years later:
  - considerable advances in technology.
  - now extensively used in obstetrics.
Ultrasound in Nigeria

- Introduced into Nigeria >30 years ago - handled by specialists only
- Initially Radiologists later Obstetricians & other practitioners
- Untrained personnel use USS
- No regulation or protocols of practice
- No formal training in under / post-graduate curriculum
- About 50% of pregnant Nigerian women attend ANC - 40% more than 4 visits
Issues

- Pregnant woman goes for USS anywhere to “view baby”
- Waste of resources
- Quality of scan
  - resolution & sophistication of machine
  - expertise & experience of operator
- Need to determine appropriate use
- Need for regulatory procedures/guideline
Objectives

- To review the literature to determine appropriate use of USS during routine ANC

- Make recommendations on appropriate use of USS in Nigeria during ANC
Methodology

- Extensive search - WHO HQ electronic resources (the OVID, Medline, Popline and Cochrane data bases)
- Blackwell SYNERGY
- On-line journals
- Library search
- “Google” search - general information
  (54 papers and 2 general information documents)
  (4 Cochrane reviews, 8 RCTs & a number of other studies)
Critical analysis

- Routine USS not associated with definite improvement in fetal and maternal outcome
- Generally considered safe, however experimental studies suggest otherwise
- Routine USS only justified when risk of fetal anomaly is high and pregnancy termination is allowed legally & morally
- There are definite indications for USS in pregnancy based on clinical assessment
Percentage of patients delivering spontaneously within (+/-) one, to > four weeks of estimated date of delivery based on the LMP and USS at 12 - 18 weeks

Optimal neonatal history
Ultrasound

% spontaneous deliveries

Actual date of delivery around EDD
Critical analysis

- Rate of adverse pregnancy outcome in the multiple pregnancy subset in a large RCT: 25% in USS & 37.7% in control (RR=0.7, 95% CI 0.39 to 1.11)
- Whole study (n=15,151): 5.0% USS & 4.9% control (RR 1.0, 95% CI 0.9 to 1.2)
- Frequent exposure to USS
  - Kieler (1998) - delayed speech at 8-9yr
  - Newnham (1993) - reduced fetal weight
Discussion

- Average cost £23.00- 31.00 (UK)
  Over $1 billion spent on unnecessary USS per year in USA
- Examples of misuse of USS
  - sex determination
  - fetal keepsake videos
- Inaccurate assessments
- Three regional guidelines reviewed
Conclusion

- USS is useful clinical tool
- Use should be based on sound clinical judgement
- Should not be used routinely
- Resources are being wasted
- There is a need for further research in order to establish regulatory procedures and protocols of practice
Recommendations

- Pre and in-service training, supervised practice, accreditation and monitoring
- Use should be based on clinical judgement
- Equipment must meet international safety requirements
- Guidelines for practice
- Public awareness of appropriate use and informed choice
- Task force