

**From Research to Practice
Postgraduate Course in Reproductive Health
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**Ultrasonography:
Recommendations for its
appropriate use in routine antenatal
care in Nigeria**

by

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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)

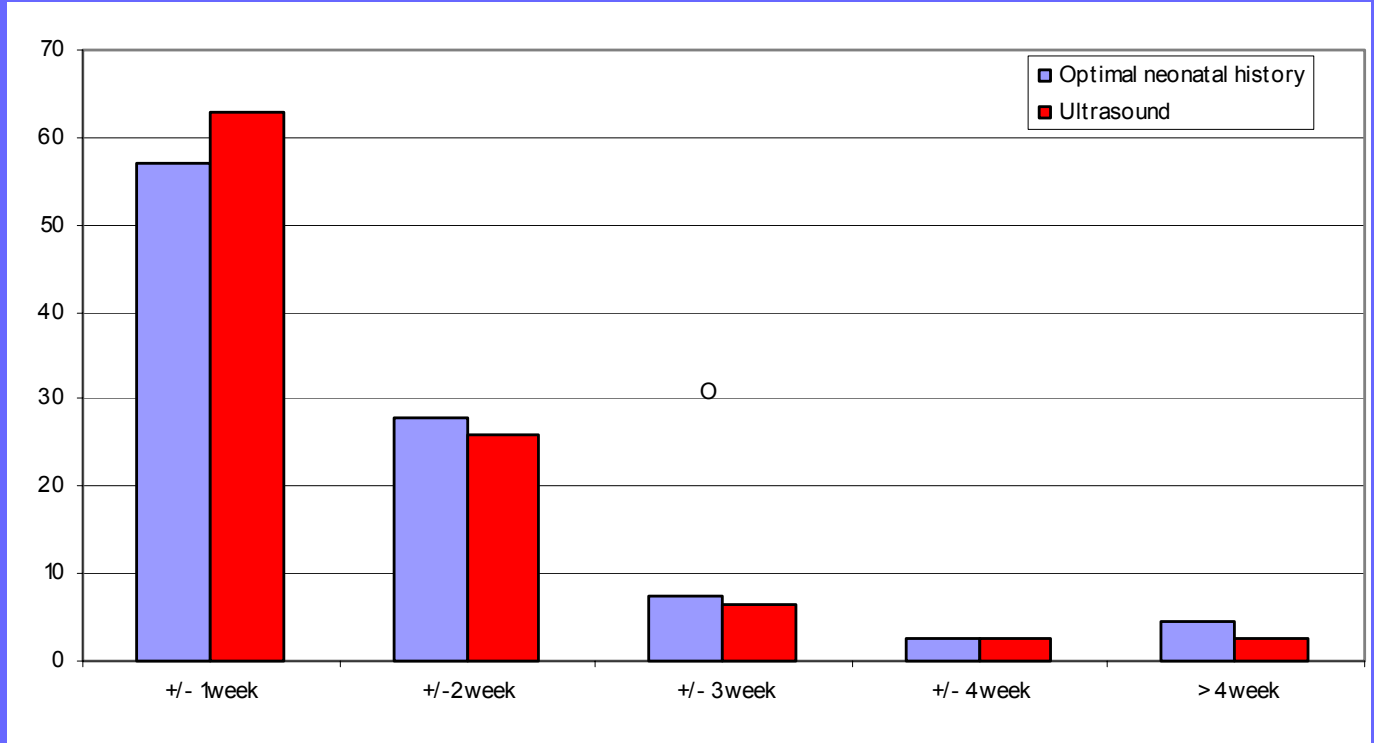
Critical analysis

- ⤵ **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

menstrual

% 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**