Field Evaluation of Haemoglobin Colour Scale in improving the treatment and referral of anaemic pregnant women

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Background

- Anaemia is a serious public health problem in developing countries
- Anaemia particularly serious during pregnancy
  - Increased maternal mortality
  - Increased infant mortality
- Screening for anaemia during pregnancy is an essential part of antenatal care
- Clinical diagnosis is inaccurate
  - Most reliable quantitative methods are expensive – therefore assessment often not carried out
  - Performance of the (relatively cheap) Haemoglobin Colour Scale (HCS) has had positive evaluations
  - Better estimation does not necessarily reflect improved health service delivery

Haemoglobin Colour Scale

- 5 studies suggest that the Scale is more sensitive method than a clinical assessment for the diagnosis of anaemia
- Ability to detect
- Anaemia : 23-97%, specificity 47-98%
- Severe anaemia : 50-94%, specificity 86-99%

What we know about HCS

- *Sensitive*
- *Specific*
- *Cost-effective*
- *User friendly*
- *Accurate method to screen anaemia at the community level*

Aim of Project

- Need to assess the extent to which the quality of service provided to the anaemic patient is improved
  - For more adapted therapy
  - For early referral

- The study will clarify if; the **correct identification** of anaemia (7-11 g/d) and severe anaemia (<7 g/d) would **result in a significant improvement of referral and management of anaemia in pregnancy**

Objectives

- a) Evaluate impact/benefit of introduction of HCS package
  - in increasing capacity to identify anaemia
  - in providing appropriate management (including referral of severely anaemic pregnant women at district level)
- b) Evaluate cost of introducing HCS at antenatal clinics in Mongolia

Study Design and Methodology

- Prospective, controlled and multicentre
- Initial focus on 2 districts in Mongolia
  - 5 clinics
  - One referral hospital in each district with obstetrics dept
- Study to be conducted in two phases:
  - Phase 1: To collect base line information
  - Phase 2a: Direct cost of introducing HCS
  - Phase 2b: Impact of introduction of HCS

Phase 1: Baseline

- Describe standard procedure for referral
- Appraise number of cases of severe anaemia normally referred
- Note number of severe cases treated at periphery
- Assess distribution of Hb among women referred
- Observe routine performance of health workers in assessing Hb

Phase II a: direct cost of introducing HCS

- Evaluate cost of training at least 2 people in each health unit
- Evaluate cost of using HCS as a screening tool in all pregnant women, particularly when coupled with RPR/other blood tests
- Evaluation will include ***direct costs***
- Above assessed by organising training workshops with only one group learning how to use HCS
- Quality of training judged later by periodic review of performance

Phase II b: impact of HCS

- Evaluate improvement of accuracy of diagnosis and correct referral after introduction of HCS
- Evaluate improvement in compliance to treatment
- District Hospital
- Prospective data collection on new admissions to obstetrics dept for 3 months (including number of referrals after HCS)
- Peripheral Level
  - Interviews
  - Questionnaires

Study Design and Methodology (cont)

Duration of the study

- Data collection: 6 months
- Data analysis: 3 months
- Results reporting and publishing : 3 months

Sample size

- District hospital: 150 referred women
- Periphery : 250 women, 50 at each clinic

Personnel

- The study is conducted in real life situation :
  - Minimal extra staff
  - Research officer: 1
  - Health worker: 2
  - Principal investigator: district hospital
  - Local coordinator

Data collection

District hospital :

- Number of women referred to hospital for severe anaemia
- Haemoglobin level at admission

Periphery clinic :

- Number of women identified as anaemic/severe anaemia
- Satisfaction: health worker and woman
- Compliance to treatment

Data analysis

- Compliance with referral : Total number of woman referred to hospital for severe anaemia are compared before and after introduction of HCS
  - *We do not expect an increase in number of woman referred by each clinic, we expect increase acceptance*
- Diagnosis: percentage of woman incorrectly referred
  - *We expect reduction in incorrect referrals*

Expected Outcomes

- HCS will enable an increase of x1.5 the number of women accepting referral and compliance to treatment
- Not expected to increase number of women referred by each unit: expect referrals would be more appropriate
- Information could be useful to introduce HCS in the list of essential equipment in Mongolia

Disseminating Results

- Internationally recognised scientific journals
- Used in programmatic action on management of pregnancy and childbirth