



# Fetal movement counting for assessment of fetal well-being: A draft systematic review

*Training in Reproductive Health Research  
Geneva 2005*

*IAMANEH Scholarship*

*L. Mangesi, South Africa*



# Presentation layout

- ◆ Definitions
- ◆ Background
- ◆ Objectives
- ◆ Selection criteria
- ◆ Search strategies
- ◆ Methods of review
- ◆ Summary of studies
- ◆ Results
- ◆ Discussions
- ◆ Conclusion



# Operational definition

- ◆ Routine Fetal movement counting: (FMC) done routinely to all women
- ◆ Selective fetal movement counting: Done to women considered to be at high risk by clinicians
- ◆ Various methods: According to when, how often and how long FM were counted
- ◆ Mixed or undefined: where trial authors did not state method or whether high or low risk



# Background

- ◆ A goal to have live baby and happy mother
- ◆ Fetal movements decrease then disappear before the fetus dies (Cronje 1996)
- ◆ Stillbirths commonly occur in women with uncomplicated pregnancies (Grant 1989)
- ◆ Ante natal visits
- ◆ Unnecessary anxiety? Timely interventions?
- ◆ Is fetal movement counting necessary?



# Objectives

To assess outcomes of pregnancy where fetal movement counting is done routinely, selectively or is not done at all

To compare different methods of fetal movement counting.



# Selection criteria

## ◆ Types of studies

- Randomised controlled trials. Poorly randomised excluded

## ◆ Types of participants

- Women with viable fetuses

## ◆ Interventions

- Routine
- Selective surveillance

Mixed or undefined

Different types of counting

Other methods fetal



# ...selection criteria

## ◆ Outcomes measured

-**Maternal:** Satisfaction, anxiety, other psychological

-**Pregnancy:** Antenatal admissions, stillbirths, preterm deliveries, low birth weight, assisted deliveries, C/S, other fetal tests,

-**Neonatal:** Neonatal deaths, five-minute Apgar score < 7  
Umbilical arterial pH < 7.2, Neonatal intensive care unit admission, Respiratory distress syndrome  
Hypoxic ischaemic encephalopathy,



# Search strategies

- ◆ PubMed and CENTRAL

Search words: fetus, fetal, movement and count or counting

- ◆ Search strategy developed for the Cochrane Pregnancy and Childbirth Group.



# Methods of review

- ◆ Trials evaluated for quality
- ◆ Scores for allocation concealment (A, B, C, D)
- ◆ Scrutinised for intention to treat analysis and losses to follow up
- ◆ More info from trial authors, assistance from statisticians



## ...methods of review

- ◆ Data extracted, tables, Revman, accuracy, Revman analysis
- ◆ Cluster randomised: Donner 2001 & statisticians
- ◆ Dichotomous data: RR and 95% CI  
Heterogeneity: Odds ratio and 95% CI
- ◆ Continuous data: Weighted mean difference and 95% CI,
- ◆ Could not do subgroup analysis

# Summary of studies

## Description

- ◆ 12 studies considered
- ◆ 3 studies included (Gomez 04, Freda 93, Thomsen 90)
- ◆ 6 studies excluded
- ◆ 3 awaiting more information

## Methodological quality of included studies

All RCT, One: AC was A (Freda 1993)

Two studies: AC was B, (Gomez 2004) and (Thomsen 1990)

22% post enrolment exclusions in treatment and 24% in control (Thomsen 1990) No ITT, poor contribution from each



# Results

One study compared FMC with hormone assessment

FMC: ↓ hospital visits (significant), A trend to ↑ C/S, A trend to ↑ insecurity

No significant differences in hospital admissions, stillbirths, Apgar scores, umbilical PH, growth retardation



## ....results

Two included studies measure compliance between two methods of FMC

↑ Compliance Cardiff, another study: Trend to ↑ compliance Cardiff, Overall: ↑ compliance

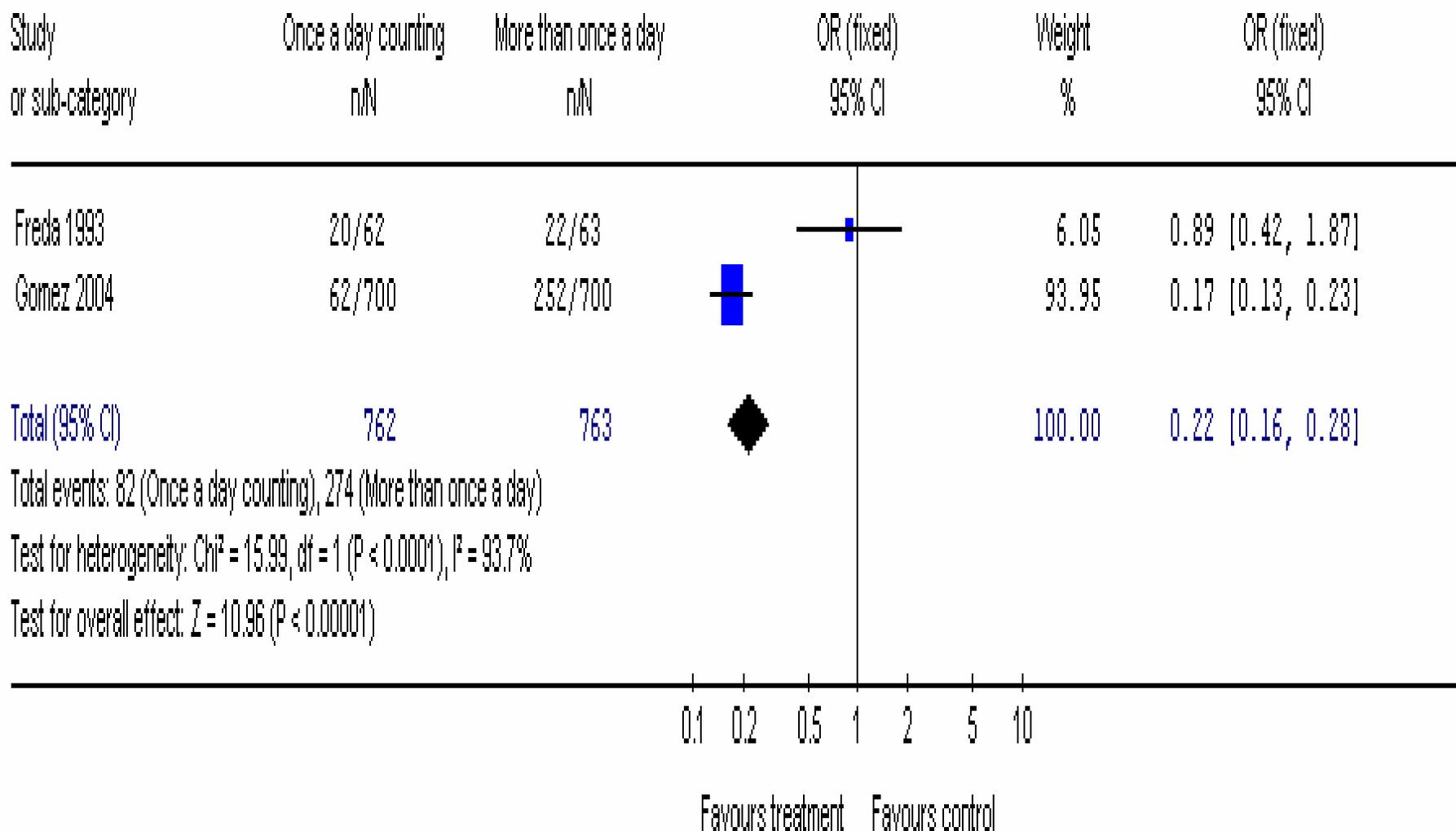
**Excluded:** Neldam 83, 13 women had ↓ FM before stillbirths, 9 in normal pregnancies;

Grant 82, 17 ↓ FM- No emergency delivery +/- false reassurance from diagnostic testing, esp CTG and clinical error

Review: Fetal movement counting for assessment of fetal well-being

Comparison: 06 Once a day fetal movement counting vs a more than once a day fetal movement counting method

Outcome: 02 Failure to comply





# Discussion

- ◆ None addressed the main objectives, two of the included studies 12-15yrs old, 1 recent (Gomez 2004) measured only one outcome.
- ◆ Allocation concealment not satisfactory
- ◆ Total number from all 3 trials 2 716
- ◆ A possibility of contamination
- ◆ Possibility of Hawthortone effect
- ◆ FMC associated with no major complications



# Conclusion

- ◆ Cannot draw firm conclusions

Studies few, participants few

A maximum of two studies contributed to a single outcome

- ◆ Robust research: benefits/ risks especially in low risk women
- ◆ No negative outcomes associate with FMC except for a trend to ↑ C/S, a trend to ↑ insecurity

"Batho pele"



**Batho pele**

**Thank you**