Preventing unsafe abortion

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Definition of Terms

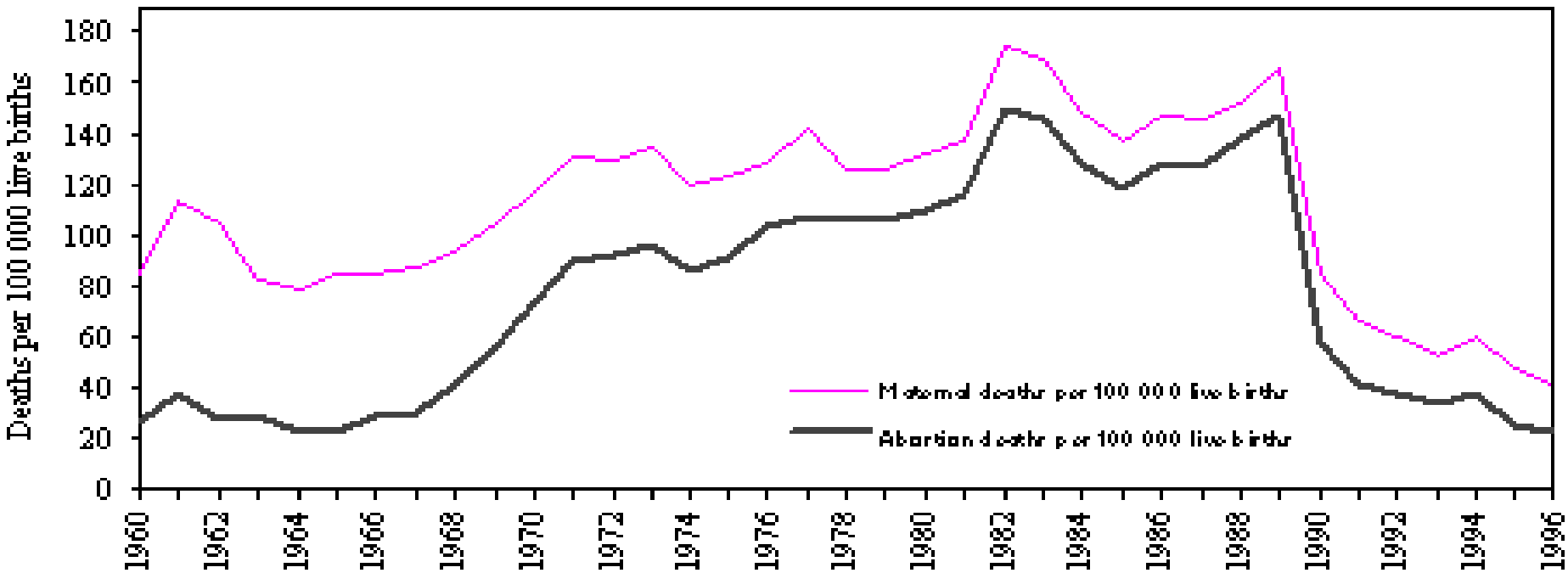
- "abortion" refers to the termination of pregnancy from whatever cause before the fetus is capable of extrauterine life.
- “spontaneous abortion" refers to those terminated pregnancies that occur without deliberate measures
- "induced abortion" refers to termination of pregnancy through a deliberate intervention intended to end the pregnancy (WHO, 1994).

Definition of unsafe abortion

- **"...a procedure for terminating unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards of both"** which therefore exposes the women to an increased risk of morbidity and mortality.

(WHO,1993)

Effects of the introduction of the anti-abortion law in Romania (1966)



Unsafe abortion - consequences

- Morbidity
- Health care sector

Data collection

- Hospital admissions for complications
- Community surveys
- Abortion providers' surveys
- Mortality studies

- Unsafe abortion database

Global annual estimates of incidence and mortality for unsafe abortions 1995-2000

(WHO, 2000)

	World total	Africa	Asia	Europe	Latin America
Incidence rate (*unsafe abortions per 1 000 women 15-49)*	13	27	11	5	30
Incidence ratio (*unsafe abortions per 100 live births)*	15	16	13	12	36
Estimated number of deaths due to unsafe abortion	78 000	34 000	38 500	500	5000
Proportion of maternal deaths (*% of maternal deaths due to unsafe abortion*)	13	13	12	17	21

Methods

- Surgical
- Non-surgical
- Menstrual regulation (MR)
  - generally used to describe early evacuation of the uterus, after a delayed menses, often without confirmation of pregnancy

Antigestagen

- Developed during 1960s
- Mifepristone (RU 486)
  - Suppression of folliculogenesis and ovulation
  - endometrium
- Receptors
  - Progesteron
  - Glucocorticoid

Mifepristone

- Action
  - endometrium
  - uterus
  - cervix
- Pharmacokinetics
  - Linear 2-25 mg/day
  - Non-linear above 100 mg/day

Misoprostol, Gemeprost

- Prostaglandin E1 + E2
- Effectiveness: < 90%
- Side effects

Strategy - Cochrane systematic review

- Randomised controlled trials
- Critical appraisal
- Meta - analysis where appropriate
- Search and methods according to Cochrane Fertility Regulation Group Guidelines

Approach

- Pregnant women, first trimester (<14 wks)
- Interventions
  - Medical
  - Surgical
  - Medical vs Surgical
- Outcomes
  - effectiveness, complications, side effects, acceptability

Medical abortion – structure of the review

- Combined regime: mifepristone/prostaglandin
  - Dose, route, time of administration, type of PG, split dose
- Combined regime: methotrexate/prostaglandin
  - Dose, route, timing
- Single vs combined regime
- Others
  - Tamoxifen, laminaria etc

- 14 main comparisons

Medical methods for first trimester abortion

- > 100 studies identified; 40 trials included
- many different interventions
  - route-dose-type of agent-interval…...

Medical methods Kulier 2004

Combination:

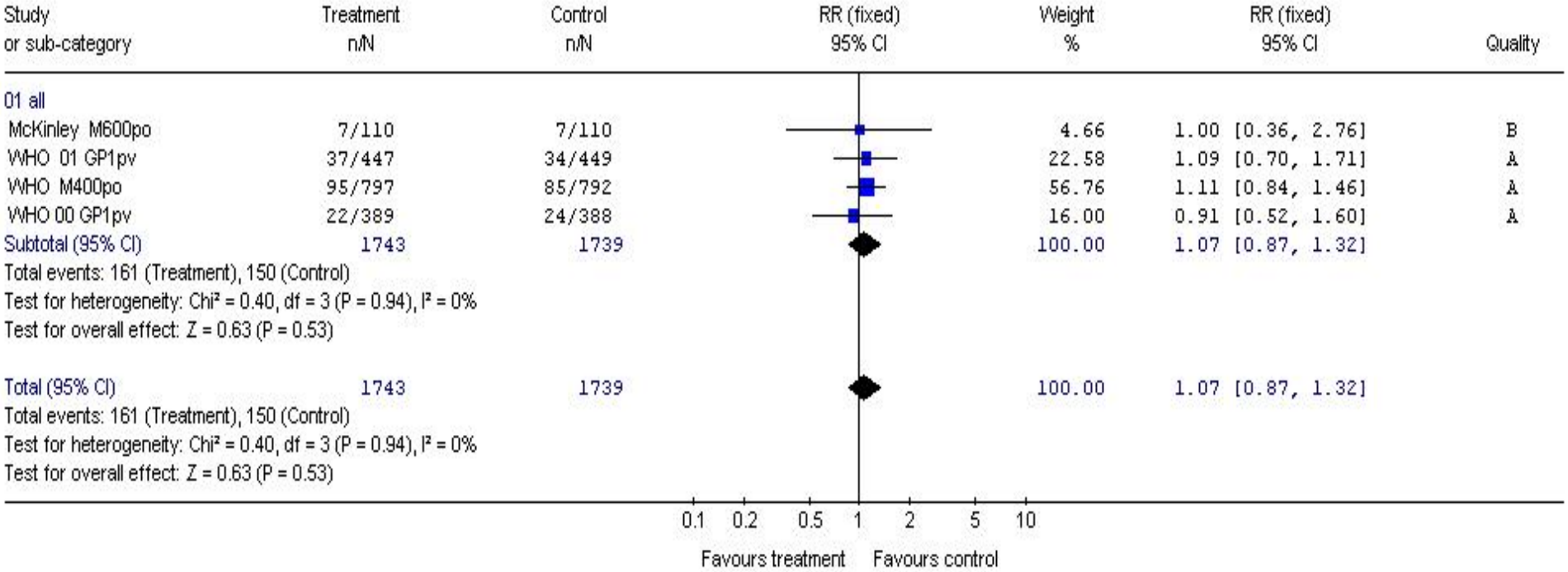
Mifepristone 200 – 600 mg
followed by
Prostaglandin
- Type
- Dose
- Route
- Time interval

Medical methods

dose of mifepristone

Kulier 2004

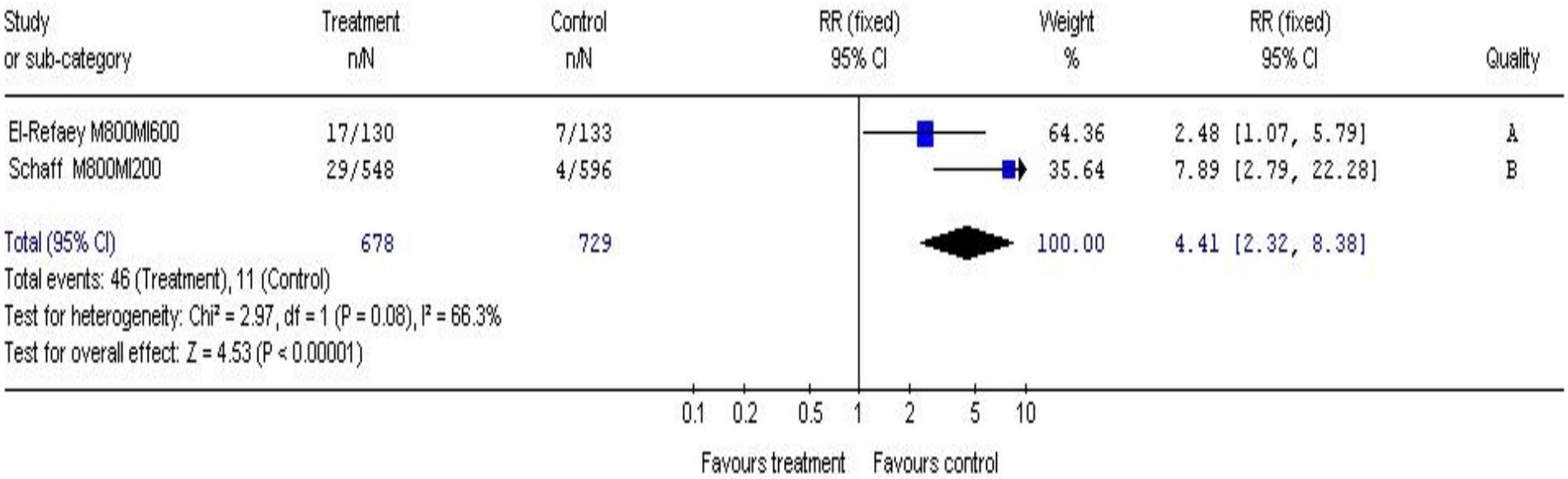
Review: Medical methods for first trimester abortion
Comparison: 01 combined regimen mifepristone/prostaglandin: dose of mifepristone: 600mg vs 200mg
Outcome: 01 failure to achieve complete abortion



Medical methods Kulier 2004

misoprostol po vs pv

Review: Medical methods for first trimester abortion
Comparison: 05 combined regimen mifepristone/prostaglandin: misoprostol po vs pv
Outcome: 01 failure to achieve complete abortion

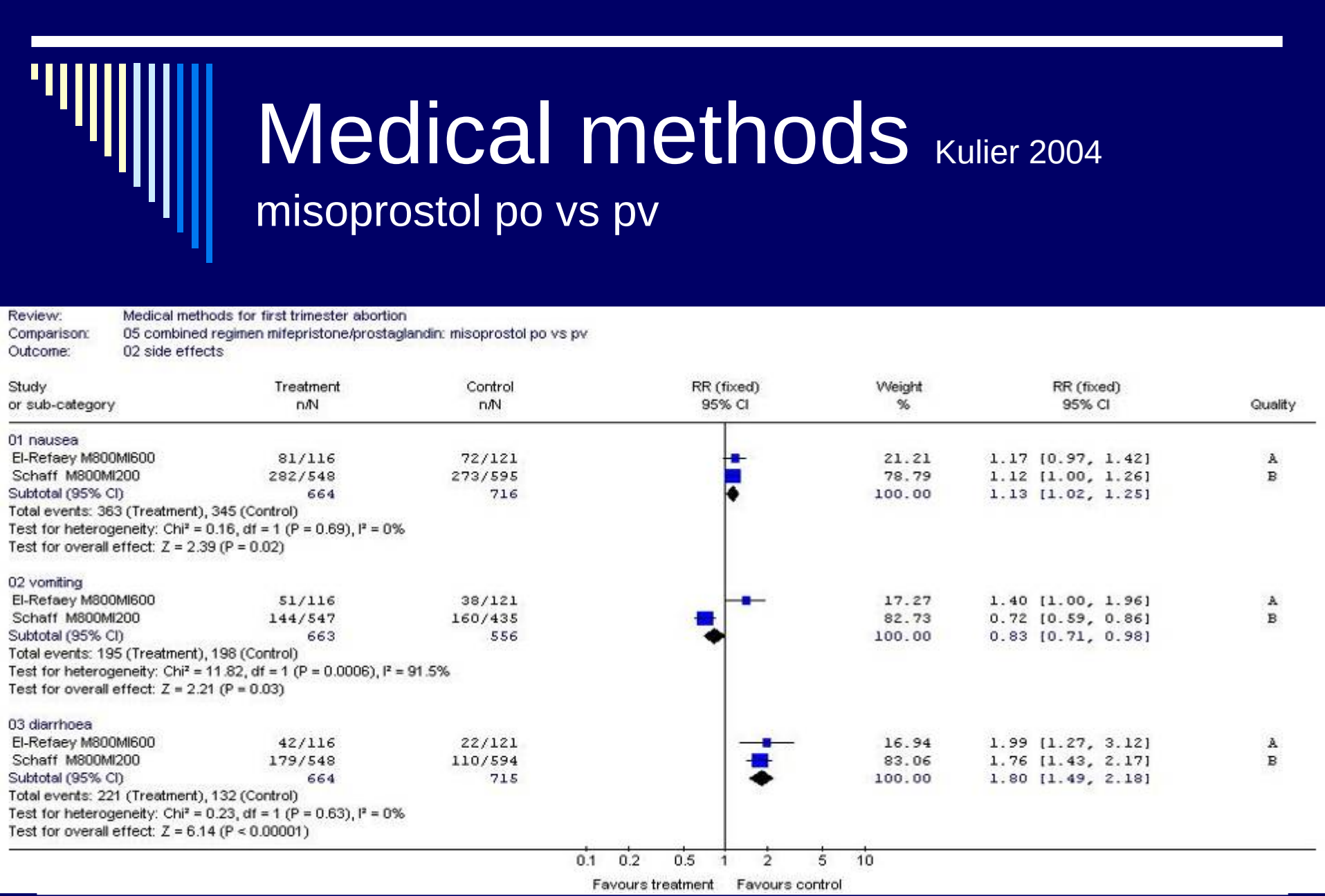


Medical methods Kulier 2004

misoprostol po vs pv

Review: Medical methods for first trimester abortion
Comparison: 05 combined regimen mifepristone/prostaglandin: misoprostol po vs pv
Outcome: 02 side effects

Study or sub-category	Treatment n/N	Control n/N	RR (fixed) 95% CI	Weight %	RR (fixed) 95% CI	Quality
01 nausea						
El-Refaey M800MI600	81/116	72/121		21.21	1.17 [0.97, 1.42]	A
Schaff M800MI200	282/548	273/595		78.79	1.12 [1.00, 1.26]	B
Subtotal (95% CI)	664	716		100.00	1.13 [1.02, 1.25]	
Total events: 363 (Treatment), 345 (Control)						
Test for heterogeneity: Chi² = 0.16, df = 1 (P = 0.69), I² = 0%						
Test for overall effect: Z = 2.39 (P = 0.02)						
02 vomiting						
El-Refaey M800MI600	51/116	38/121		17.27	1.40 [1.00, 1.96]	A
Schaff M800MI200	144/547	160/435		82.73	0.72 [0.59, 0.86]	B
Subtotal (95% CI)	663	556		100.00	0.83 [0.71, 0.98]	
Total events: 195 (Treatment), 198 (Control)						
Test for heterogeneity: Chi² = 11.82, df = 1 (P = 0.0006), I² = 91.5%						
Test for overall effect: Z = 2.21 (P = 0.03)						
03 diarrhoea						
El-Refaey M800MI600	42/116	22/121		16.94	1.99 [1.27, 3.12]	A
Schaff M800MI200	179/548	110/594		83.06	1.76 [1.43, 2.17]	B
Subtotal (95% CI)	664	715		100.00	1.80 [1.49, 2.18]	
Total events: 221 (Treatment), 132 (Control)						
Test for heterogeneity: Chi² = 0.23, df = 1 (P = 0.63), I² = 0%						
Test for overall effect: Z = 6.14 (P < 0.00001)						



Medical methods WHO 2003

- Misoprostol: oral vs vaginal
- Multicentric RCT
- N=2219

Medical methods WHO 2003

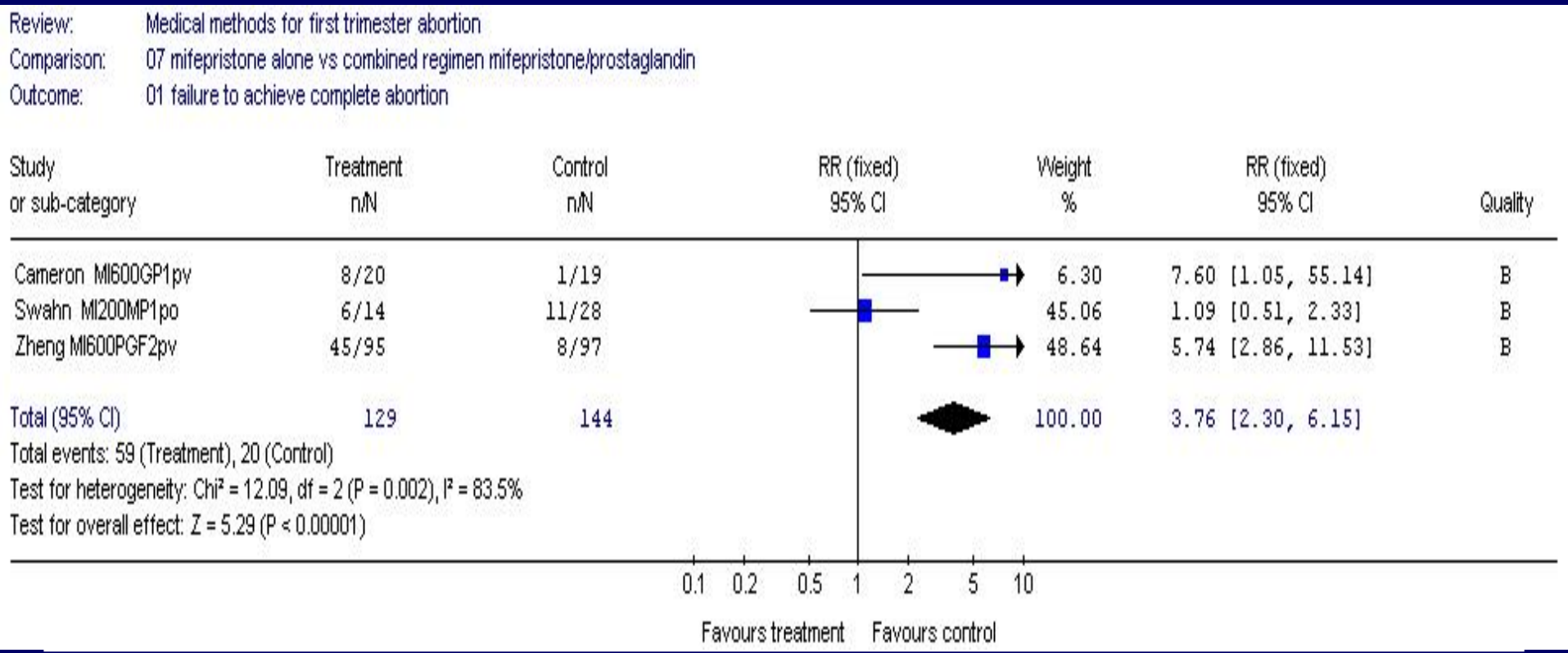
	O/O	**V/O**	**V-only**
Day 1	Oral mifepristone (200mg)	Oral mifepristone (200 mg)	Oral mifepristone (200 mg)
Day 3	Oral misoprostol (0.8 mg) and vaginal placebo	Vaginal misoprostol (0.8 mg) and oral placebo	Vaginal misoprostol (0.8 mg) and oral placebo
Days 4-10	Oral misoprostol (0.4 mg) twice daily	Oral misoprostol (0.4 mg) twice daily	Oral placebo twice daily

Medical methods – outcomes WHO 2003

Length of amenorrhoea (days)	Group	n/N	Relative risk	95% CI
< 49	O/O	15/236	1.2	0.6-2.4
	V/O	13/240	(ref)	
	V-only	11/223	0.9	0.4-2.0
50-56	O/O	16/240	1.0	0.5-1.9
	V/O	17/246	(ref)	
	V-only	16/242	1.0	0.5-1.9
> 57	**O/O**	**26/264**	**2.8**	**1.3-5.8**
	V/O	**9/254**	**(ref)**	
	V-only	**21/268**	**2.2**	**1.0-4.7**
All	O/O	57/740	1.5	1.0-2.2
	V/O	39/741	(ref)	
	V-only	48/738	1.2	0.8-1.9

Medical methods Kulier 2004

mifepristone vs combined regimen

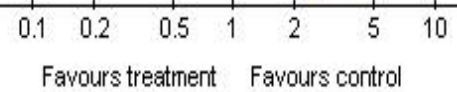


Medical methods Kulier 2004

prostaglandin vs combined regimen

Review: Medical methods for first trimester abortion
Comparison: 08 prostaglandin alone vs combined regimen (all)
Outcome: 01 failure to achieve complete abortion

Study or sub-category	Treatment n/N	Control n/N	RR (fixed) 95% CI	Weight %	RR (fixed) 95% CI	Quality
01 all						
Cheng PGE1&T	36/76	20/75		54.11	1.78 [1.14, 2.77]	A
Creinin M800&MT	16/30	3/31		7.93	5.51 [1.79, 17.00]	A
Jain M800&MI	15/125	5/119		13.77	2.86 [1.07, 7.61]	A
Jain M800&TM	7/75	5/75		13.44	1.40 [0.47, 4.21]	B
Ozeren MP800&MT	15/36	4/36		10.75	3.75 [1.38, 10.21]	A
02 =/< 49 days gestation						
Jain M800&MI	9/80	3/75		100.00	2.81 [0.79, 10.00]	A
03 > 49 days gestation						
Jain M800&MI	6/45	2/44		100.00	2.93 [0.63, 13.76]	A



Methotrexate

- Folic acid antagonist
- Toxic on trophoblast
- Combination with prostaglandin
  - Effectiveness ~ 95 %
- Fetal anomalies

Conclusions - medical methods

- Combined regimes are more effective
- Mifepristone 200 mg seems adequate in the combined regime
- vaginal prostaglandin is more effective compared to oral

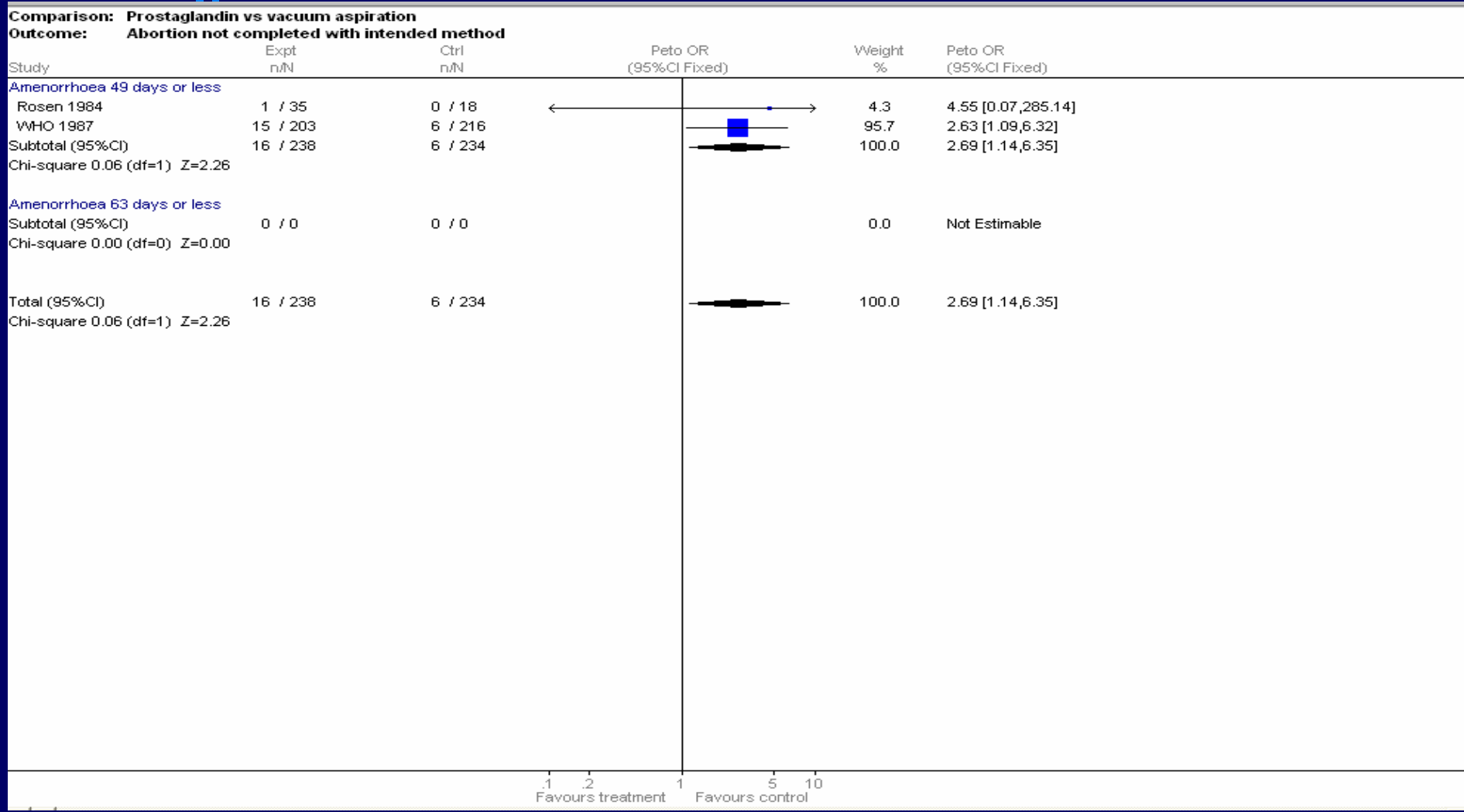
Medical methods - unresolved issues

- No firm conclusion:
  - Effectiveness: dose, type or time of prostaglandin, splitting of dose
  - Acceptability po vs pv
  - Methotrexate: dose, time, route of PG
- Early vs late ?

Medical vs Surgical Say 2004

- 6 randomised controlled trials
- 4 comparisons:
  - Prostaglandin vs vacuum aspiration
  - Mifepristone vs vacuum aspiration
  - Mifepristone/prostaglandin vs vacuum aspiration
  - Methotrexate/prostaglandin vs vacuum aspiration

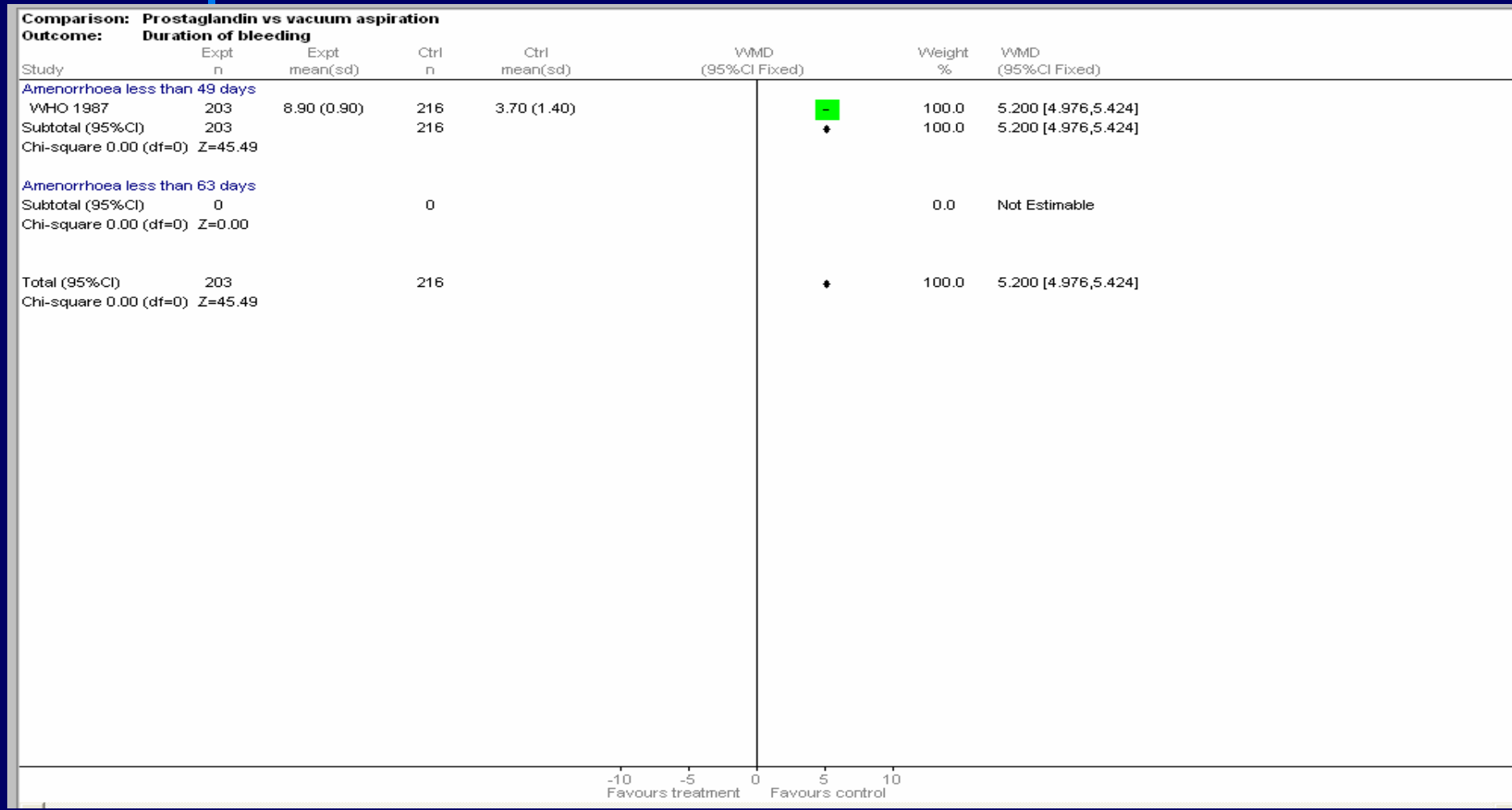
Medical vs surgical Say 2004



Medical vs surgical

Say 2004

Prostaglandin vs VA



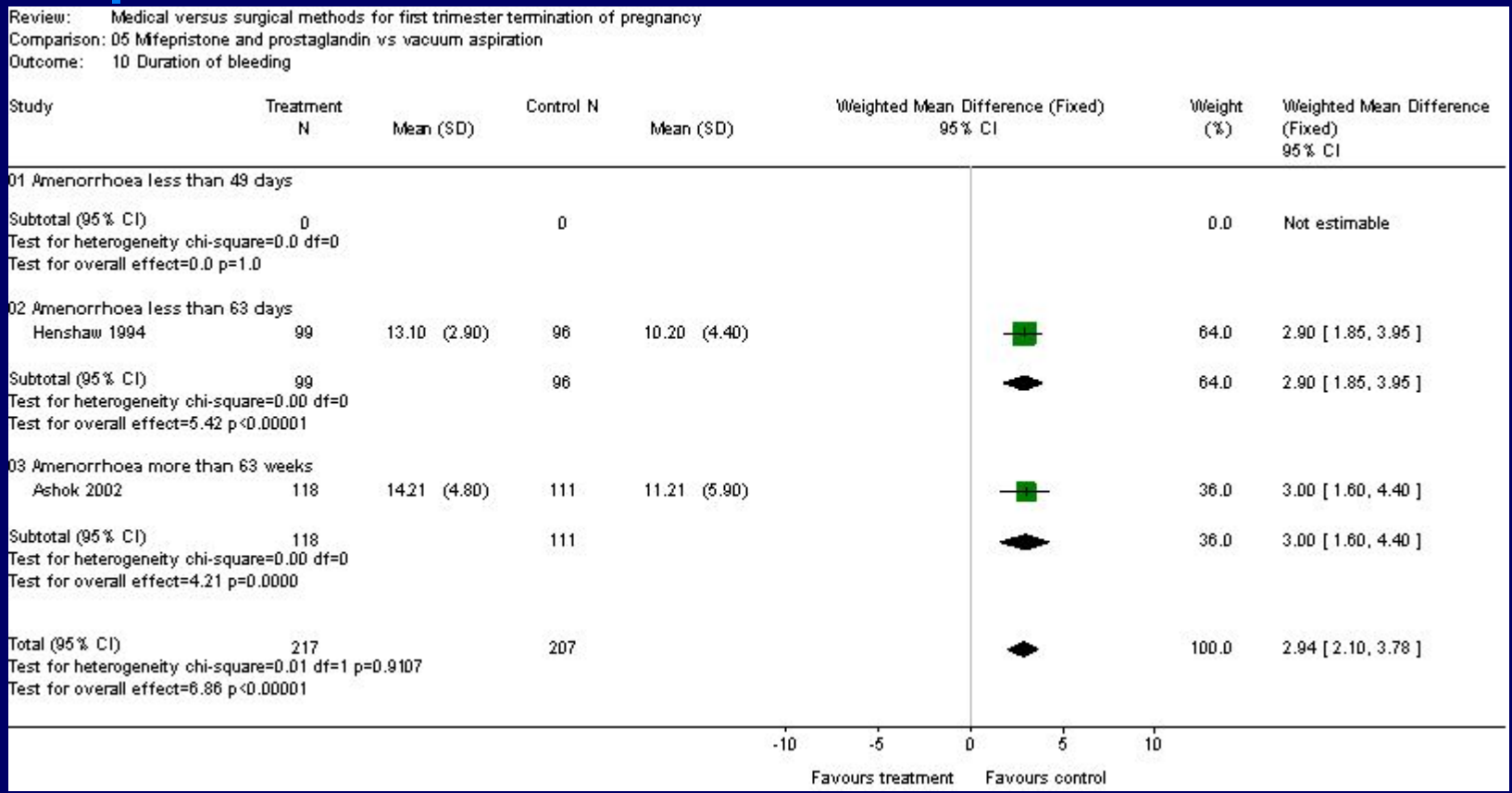
Medical vs surgical

Say 2004

Mifepristone/prostaglandin vs VA

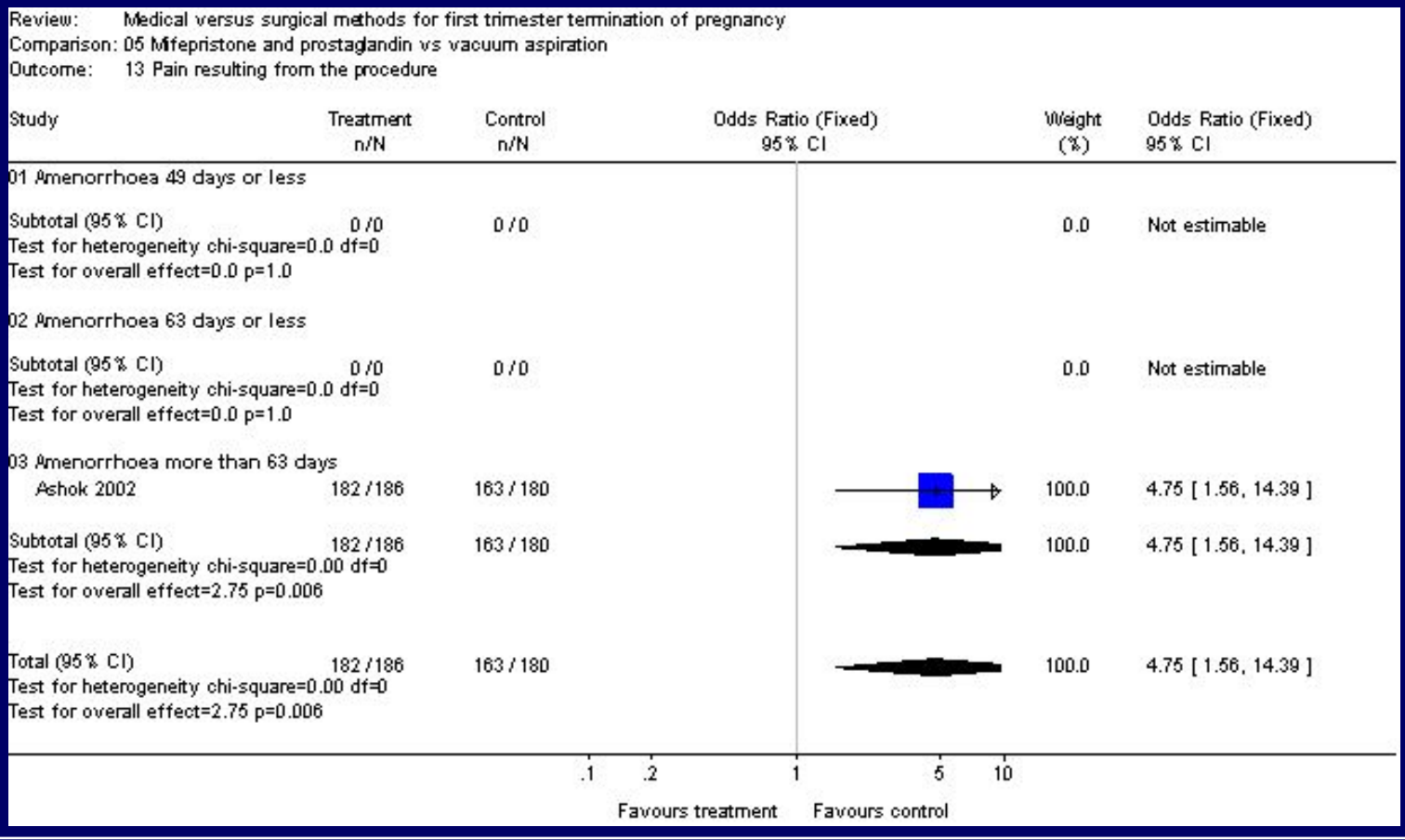
Review: Medical versus surgical methods for first trimester termination of pregnancy
Comparison: 05 Mifepristone and prostaglandin vs vacuum aspiration
Outcome: 10 Duration of bleeding

Study	Treatment N	Mean (SD)	Control N	Mean (SD)	Weighted Mean Difference (Fixed) 95% CI	Weight (%)	Weighted Mean Difference (Fixed) 95% CI
01 Amenorrhoea less than 49 days							
Subtotal (95% CI)	0		0			0.0	Not estimable
Test for heterogeneity chi-square=0.0 df=0							
Test for overall effect=0.0 p=1.0							
02 Amenorrhoea less than 63 days							
Henshaw 1994	99	13.10 (2.90)	96	10.20 (4.40)		64.0	2.90 [1.85, 3.95]
Subtotal (95% CI)	99		96			64.0	2.90 [1.85, 3.95]
Test for heterogeneity chi-square=0.00 df=0							
Test for overall effect=5.42 p<0.00001							
03 Amenorrhoea more than 63 weeks							
Ashok 2002	118	14.21 (4.80)	111	11.21 (5.90)		36.0	3.00 [1.60, 4.40]
Subtotal (95% CI)	118		111			36.0	3.00 [1.60, 4.40]
Test for heterogeneity chi-square=0.00 df=0							
Test for overall effect=4.21 p=0.0000							
Total (95% CI)	217		207			100.0	2.94 [2.10, 3.78]
Test for heterogeneity chi-square=0.01 df=1 p=0.9107							
Test for overall effect=6.86 p<0.00001							



Medical vs surgical Say 2004

Mifepristone/PG vs VA



Medical vs surgical Henshaw 1994

Mifepristone/PG vs VA

	Medical n = 172	Vacuum aspiration n = 191	95% CI for difference between proportions
Complete abortion	94.2%	97.9%	-0.003 to 0.078
Minor complications within	11.0%	15.7%	-0.116 to 0.023
Requiring uterine curettage	5.8%	2.1%	

Medical vs surgical Say 2003

- Small sample sizes
- Medical:
  - Longer duration of bleeding
  - Single regimes less effective than vacuum
- Acceptability ?

Surgical methods

- Vacuum aspiration
- Dilatation/curettage
- Manual vacuum aspiration (MVA)

Surgical methods for first trimester abortion Kulier 2003

- 3 trials included
- 2 comparisons:
  - Vacuum aspiration vs dilatation &curettage
  - Metal vs plastic cannula for vacuum aspiration
- N = 767

Surgical methods Kulier 2003

VA vs dilatation/curettage

Outcome	No of trials	No of participants	RR (95%CI)
Excessive blood loss	2	257	1.02 (0.21-4.95)
Febrile morbidity	2	467	0.84 (0.26 – 2.71)
Incomplete evacuation	2	467	0.67 (0.11 – 3.95)
Abdominal pain	2	467	2.03 (0.38 – 10.97)

Surgical methods Hemlin 2001

VA vs MVA

- RCT; < 56 days of amenorrhoea
  - MVA n = 91
  - VA n = 88
  - Effectiveness
  - Complications

Surgical methods Hemlin 2001

Outcome	MVA (n=91)	VA (n=88)
Ongoing pregnancy	0	0
Re-curettage	2	2
infection	2	2

Conclusions

- Safe and effective methods for first trimester abortion are available
- Acceptability data scarce
- Medical methods:
  - Longer duration of bleeding
  - Single regimes less effective
- Serious complications are rare

Collaborators

- Linan Cheng
- Anis Feki
- Metin Gülmezoglu
- Justus Hofmeyr
- Lale Say

International Conference on Population and Development

In circumstances where abortion is not against the law… to ensure that abortion is safe and
accessible."
(Key actions ICPD+5, paragraph 63)

"In all cases,
women should have
access to quality services for the management of complications arising from abortion."
(Key actions ICPD+5, paragraph 63)

•F1. Promote policy dialogue on unsafe abortion, and provide guidance to countries on how to develop, implement and evaluate programmes to prevent and address unsafe abortion.

•F2. Promote the effective management of abortion complications and postabortion care, including its integration within other reproductive health services.

•F3. Develop and promote interventions to improve access to quality care in circumstances where abortion is not against the law, with special emphasis on underserved populations.

UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP)

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