

Frühgeburt, Fibronektin und Zervixlänge

Hanns Helmer

Univ.Klinik f. Frauenheilkunde Wien

Screening to prevent spontaneous preterm birth: systematic reviews of accuracy and effectiveness literature with economic modelling

H Honest, CA Forbes, KH Durée,
G Norman, SB Duffy, A Tsourapas,
TE Roberts, PM Barton, SM Jowett,
CJ Hyde and KS Khan

TABLE I Guide to the interpretation of a test accuracy represented by likelihood ratio (LR)

Category of test accuracy usefulness	Likelihood ratio for a positive test result (LR+)	Likelihood ratio for a negative test result (LR-)	Interpretation
Very useful	> 10	< 0.1	Likely to generate large and often conclusive changes from pre-test to post-test probabilities
Useful	5–10	0.1–0.2	Likely to generate moderate shifts in pre-test to post-test probabilities
May be useful	2–5	0.2–0.5	Likely to generate small but sometimes important changes in pre-test to post-test probabilities
Not useful	1–2	0.5–1	May alter pre-test to post-test probabilities to a small (and rarely important) degree

Derived from Jaeschke *et al.*;⁴⁸ Grimes and Schulz;⁴⁹ and Fagan.⁵⁰
 In any specific context, however, the value of LR below which a positive result and above which a negative result will be useless depends on how effective, safe and expensive the interventions that follow are relative to costs and outcome of false-negative cases – these will be explored in our economic evaluations.

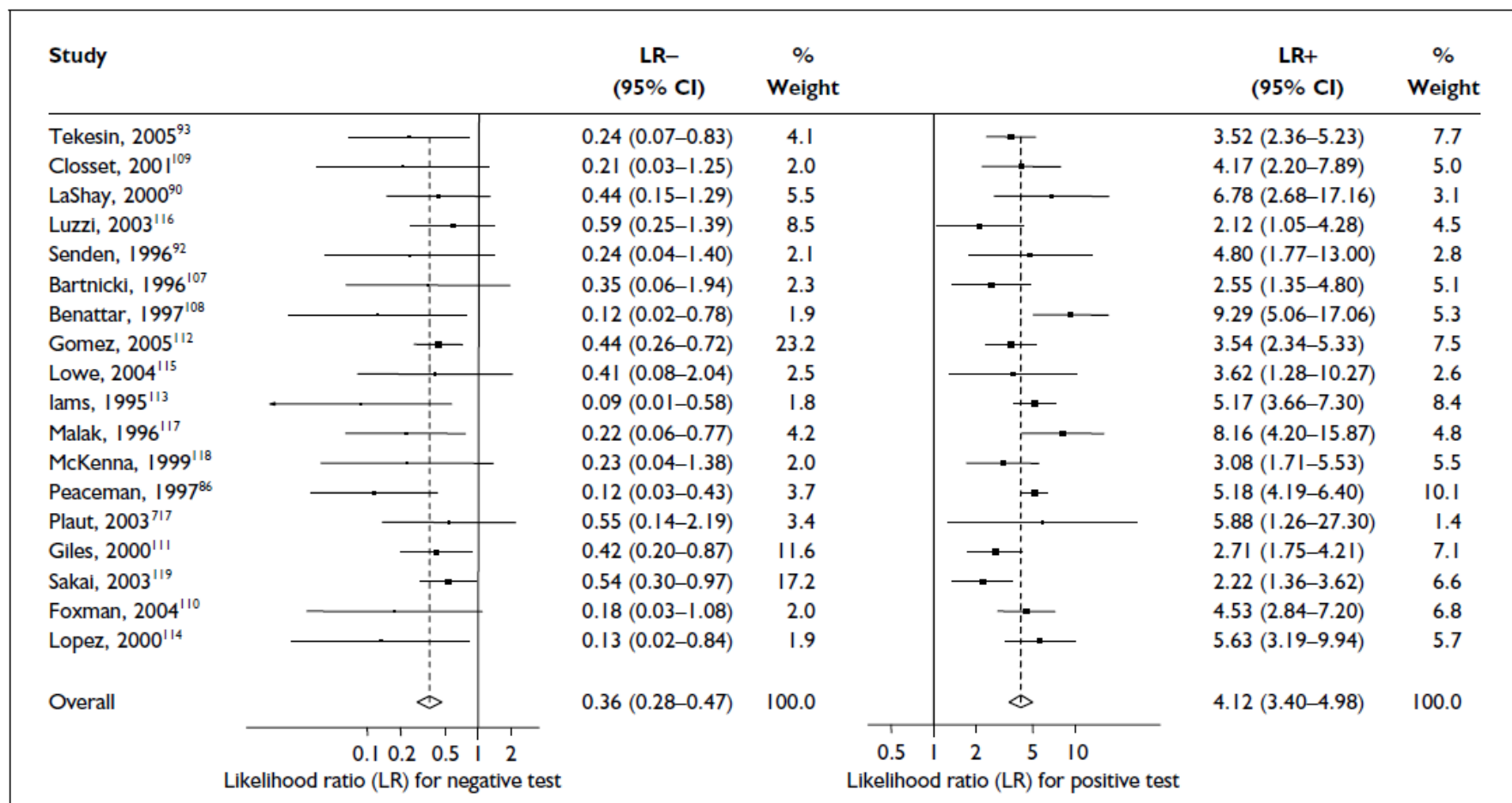


FIGURE 11 Forest plots of likelihood ratios (LRs) for cervicovaginal fetal fibronectin bedside testing on women presenting with symptoms of threatened preterm labour as a predictor of spontaneous preterm birth within 7–10 days of testing. Studies are arranged in descending order of methodological quality. χ^2 heterogeneity test $p = 0.002$ for LR+ and $p = 0.424$ for LR-.

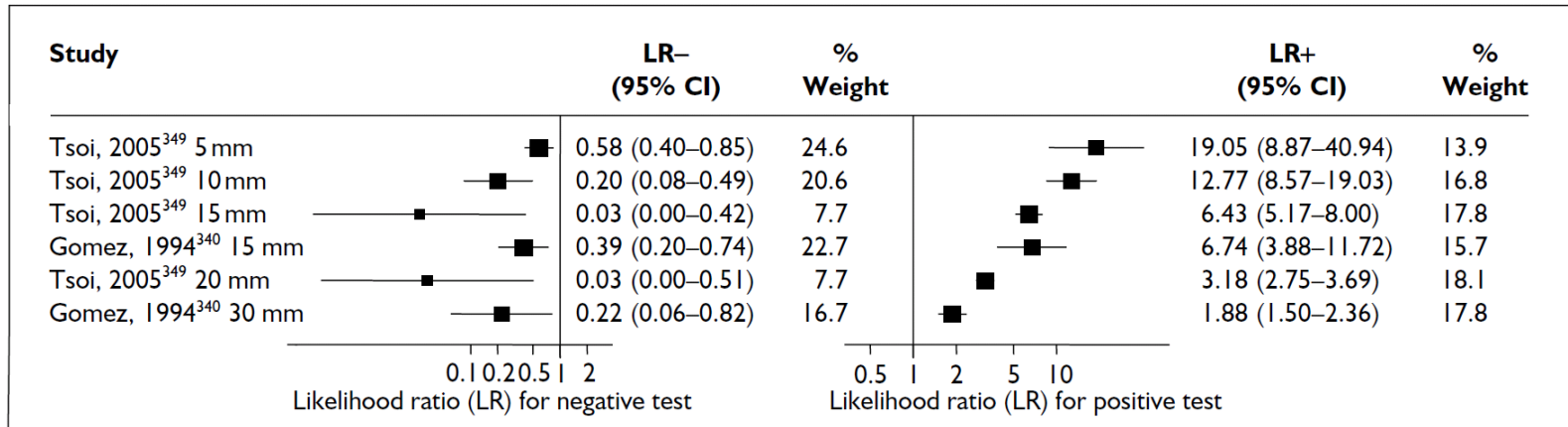


FIGURE 76 Forest plots of likelihood ratios (LRs) from ideal quality studies for cervical length measurement in predicting spontaneous preterm birth within 48 hours of testing in symptomatic women with threatened preterm labour.

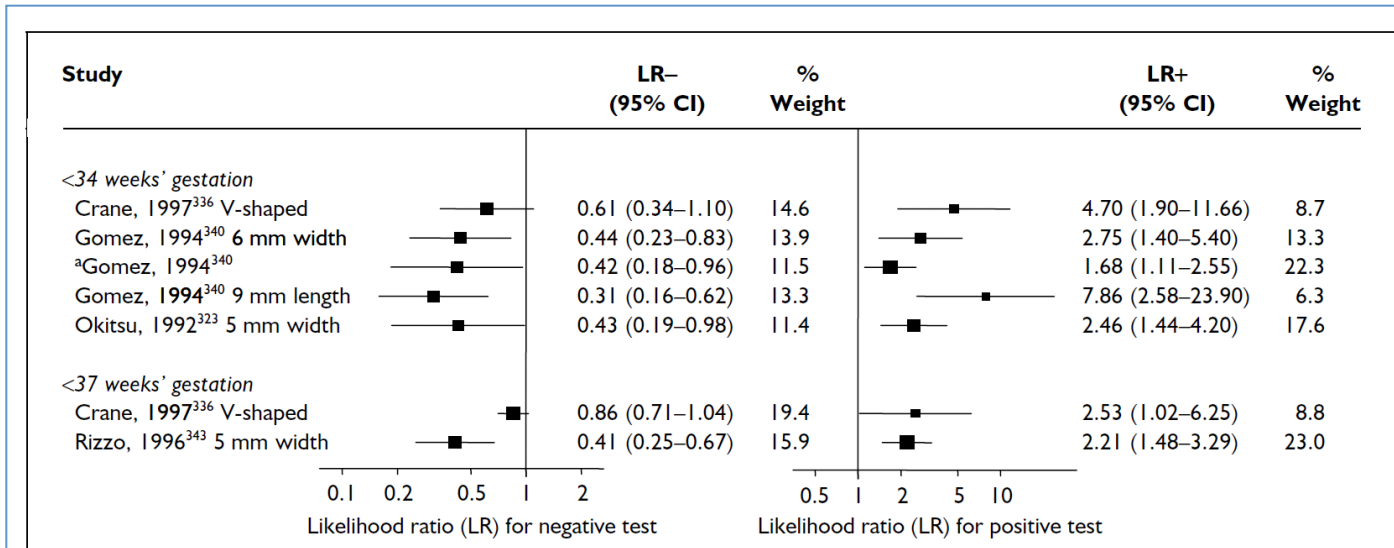
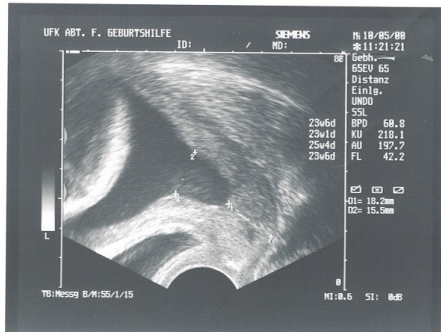


FIGURE 80 Forest plots of likelihood ratios (LRs) for cervical funnelling between 24 and 36 weeks' gestation in predicting spontaneous preterm birth stratified according to reference standards (outcomes) in symptomatic women with threatened preterm labour. Studies are arranged in descending order of quality. a. Any definition of funnelling unless otherwise stated.

	LR+ (95% CI)	LR- (95% CI)	Sensitivity (95% CI)	Specificity (95% CI)
Symptomatic women				
<u>Spontaneous preterm birth <48 hours from testing</u>				
→ Measurement of cervical length (15 mm)	6.43 (5.17–8.00)	0.027 (0.0017–0.42)	0.98 (0.84–1.00)	0.85 (0.81–0.88)
Amniotic fluid IL-6	3.76 (2.14–6.61)	0.11 (0.0167–0.726)	0.92 (0.62–0.99)	0.76 (0.60–0.88)
Amniotic fluid IL-8 (15 ng/ml)	36.00 (2.30–564.54)	0.10 (0.0074–1.42)	0.90 (0.40–1.00)	0.98 (0.81–1.00)
Cervicovaginal IL-6	2.90 (1.08–3.34)	0.23 (0.017–3.17)	0.88 (0.29–1.00)	0.54 (0.33–0.74)
→ Absence of fetal breathing movements	7.84 (1.12–54.99)	0.27 (0.14–0.51)	0.76 (0.52–0.89)	0.90 (0.79–0.99)
<u>Spontaneous preterm birth <7 days from testing</u>				
→ Measurement of cervical length (15 mm)	8.61 (6.65–11.14)	0.026 (0.0038–0.18)	0.98 (0.88–1.00)	0.89 (0.85–0.91)
Cervical β-hCG	6.07 (3.07–11.99)	0.04 (0.01–0.16)	0.97 (0.88–1.00)	0.84 (0.71–0.93)
Amniotic fluid IL-6	7.01 (2.75–17.90)	0.17 (0.060–0.49)	0.85 (0.62–0.97)	0.88 (0.72–0.97)
→ Serum C-reactive protein	34.36 (4.86–243.09)	0.17 (0.05–0.62)	0.82 (0.48–0.98)	0.98 (0.87–1.00)
→ Fetal fibronectin	3.52 (2.36–5.23)	0.24 (0.067–0.83)	0.82 (0.48–0.98)	0.77 (0.69–0.83)
Amniotic fluid IL-8 (15 ng/ml)	28.5 (1.78–456.57)	0.26 (0.064–1.03)	0.75 (0.28–0.99)	0.97 (0.81–1.00)
→ pHIGFBP-I	3.29 (2.24–4.83)	0.20 (0.10–0.41)	0.72 (0.56–0.87)	0.74 (0.59–0.91)
<u>Spontaneous preterm birth <34 weeks' gestation</u>				
Amniotic fluid IL-6	7.44 (2.01–27.52)	0.14 (0.06–0.36)	0.88 (0.71–0.96)	0.88 (0.64–0.99)
→ Measurement of cervical length (30 mm)	2.48 (1.19–5.19)	0.81 (0.68–0.97)	0.83 (0.71–0.93)	0.56 (0.48–0.61)
→ pHIGFBP-I	2.96 (2.02–4.33)	0.22 (0.08–0.64)	0.75 (0.55–0.96)	0.82 (0.48–0.98)
→ Fetal fibronectin	3.98 (2.73–5.80)	0.33 (0.19–0.58)	0.73 (0.46–0.81)	0.82 (0.68–0.96)

95% CI, 95% confidence intervals; β-hCG, β-human chorionic gonadotrophin; IL-6, interleukin-6; LR+, likelihood ratio of positive test result; LR-, likelihood ratio of negative test result; pHIGFBP-I, phosphorylated form of insulin-like growth factor binding protein I.