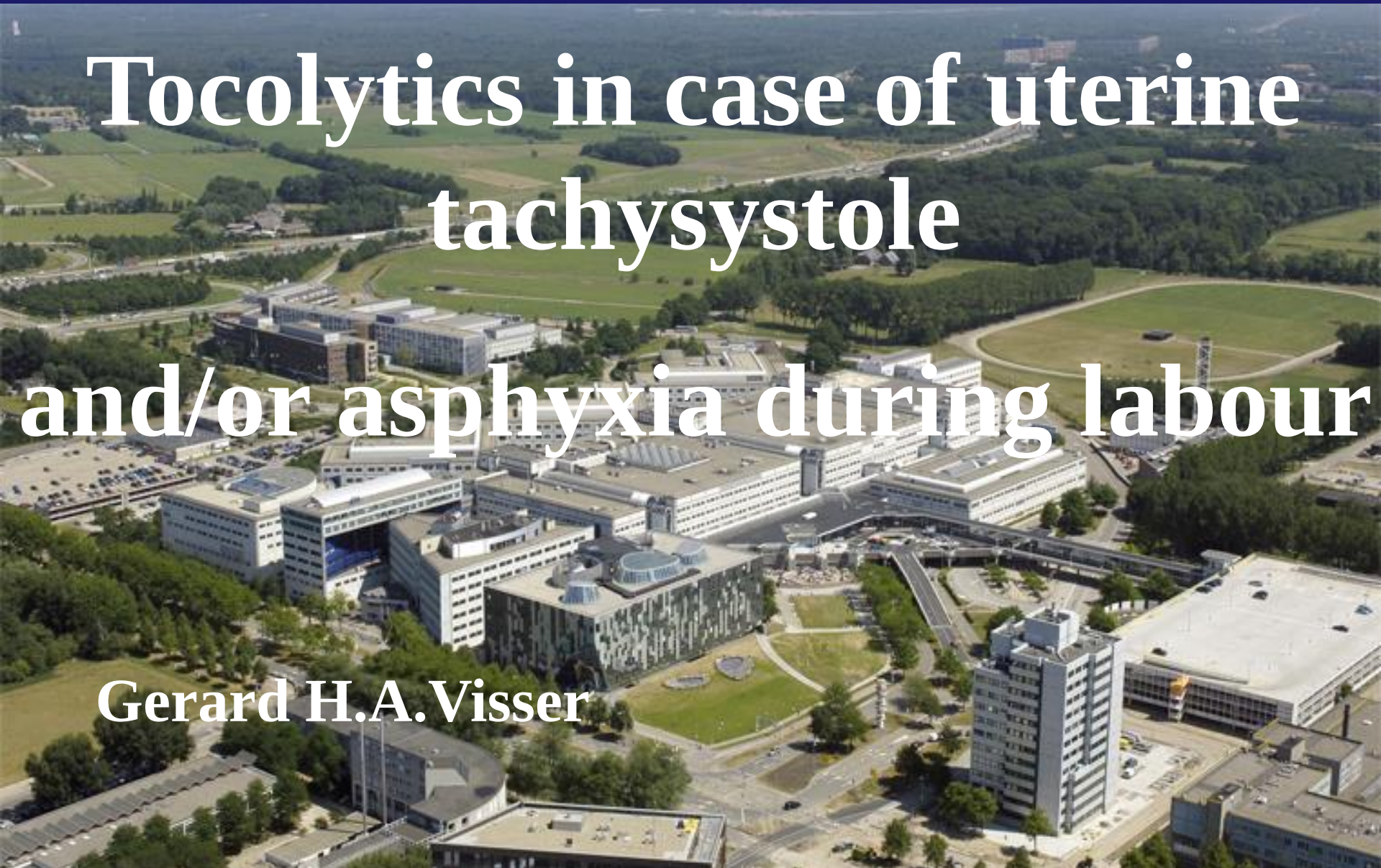
University Medical Center, Utrecht, the NL



Tocolytics in case of uterine tachysystole and/or asphyxia during labour

Gerard H.A.Visser

Meta analyses **tocolytic drugs stop contractions**

	placebo	tocolytic
• Birth delay > 48 h	53%	75-93%
• Birth delay> 7 days	39%	61-78%

- With no lengthening of gestation beyond one week

Haas et al, Obstet Gynecol 2009;113:585-594

But do not improve outcome

	placebo	tocolytic
• Birth delay > 48 h	53%	75-93%
• Birth delay> 7 days	39%	61-78%

- Since there is no significant difference in RDS or neonatal survival (in studies in which corticosteroids were given in both arms)

Haas et al, Obstet Gynecol 2009;113:585-594

Meta analyses on tocolytic drugs

	placebo	tocolytic
Birth delay > 48 h	53%	75-93%
Birth delay> 7 days	39%	61-78%

RCOG Greentop Guideline, 2010: no tocolytic drug has been associated with a reduction in prenatal or neonatal morbidity

Haas et al, Obstet Gynecol 2009;113:585-594

Reason for absence of beneficial effects?

- The majority of preterm labours –with or without intact membranes- is associated with infections or inflammation
- And both are related to neurological and respiratory complications, including PVL and CP

So why don't we only give a (rescue) course of corticosteroids and wait and see

Reason for absence of beneficial effects?

- The majority of preterm labours –with or without intact membranes- is associated with infections or inflammation
- And both are related to neurological and respiratory complications, including PVL and CP

Or corticosteroids and MgSO4

The more so since MgSO4 works < 2 h*

* See also RCOG opinion paper 29, August 2011

Preterm contractions and Tocolytic drugs, conclusions

- Tocolytics stop contractions
- But, impact on perinatal outcome is unclear, apart from intra-uterine transfer to level 3 hospital

- However, women want to be treated
- And, doctors want to treat……

- So, if you want to give a tocolytic drug (in utero transfer), use the one that is safest for mother and fetus

And what about maintenance tocolytic therapy?

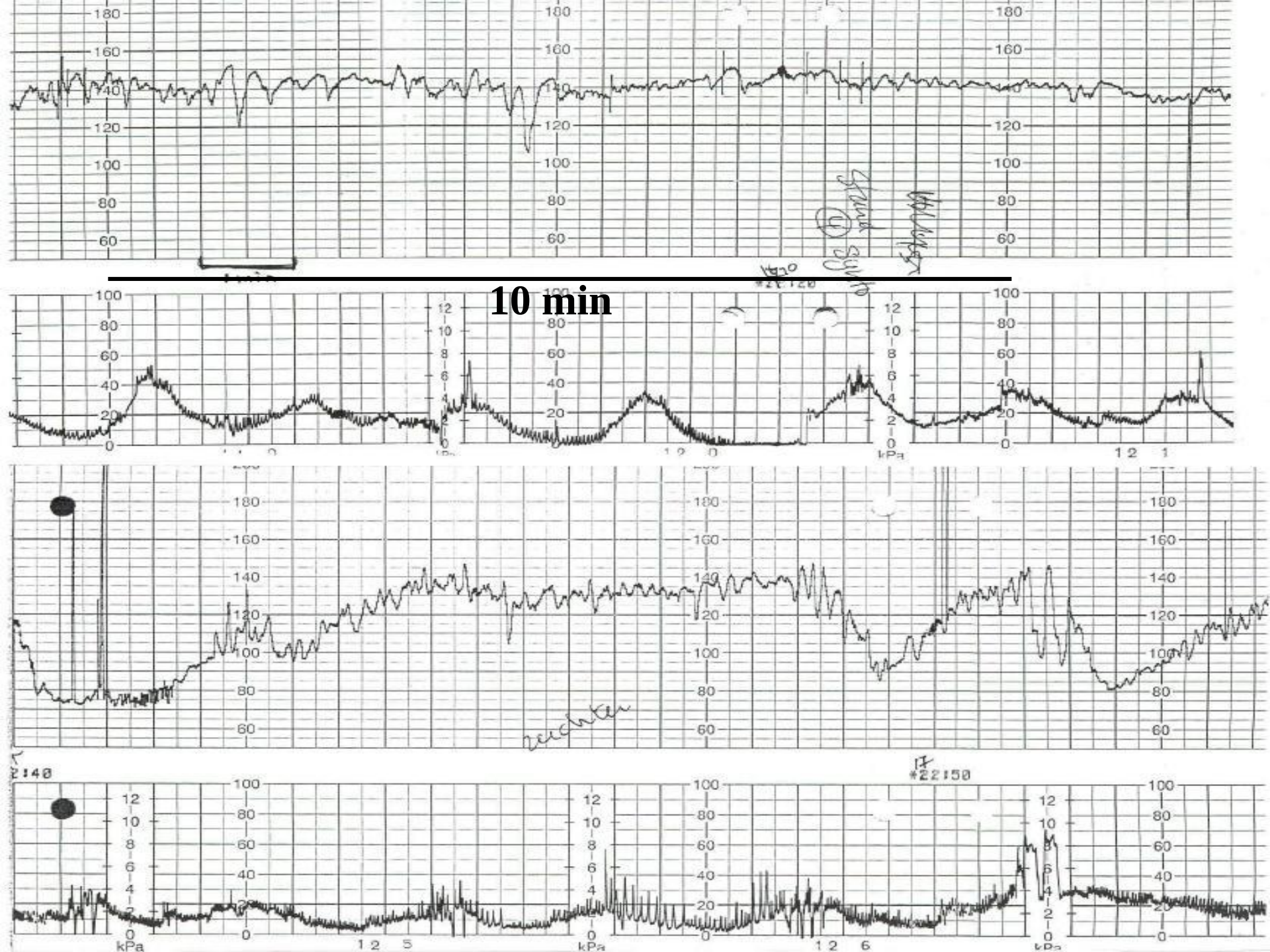
- Oxytocin antagonists, one trial only
- Oral betamimetics, 13 trials
- Ca channel blockers, 2 trials

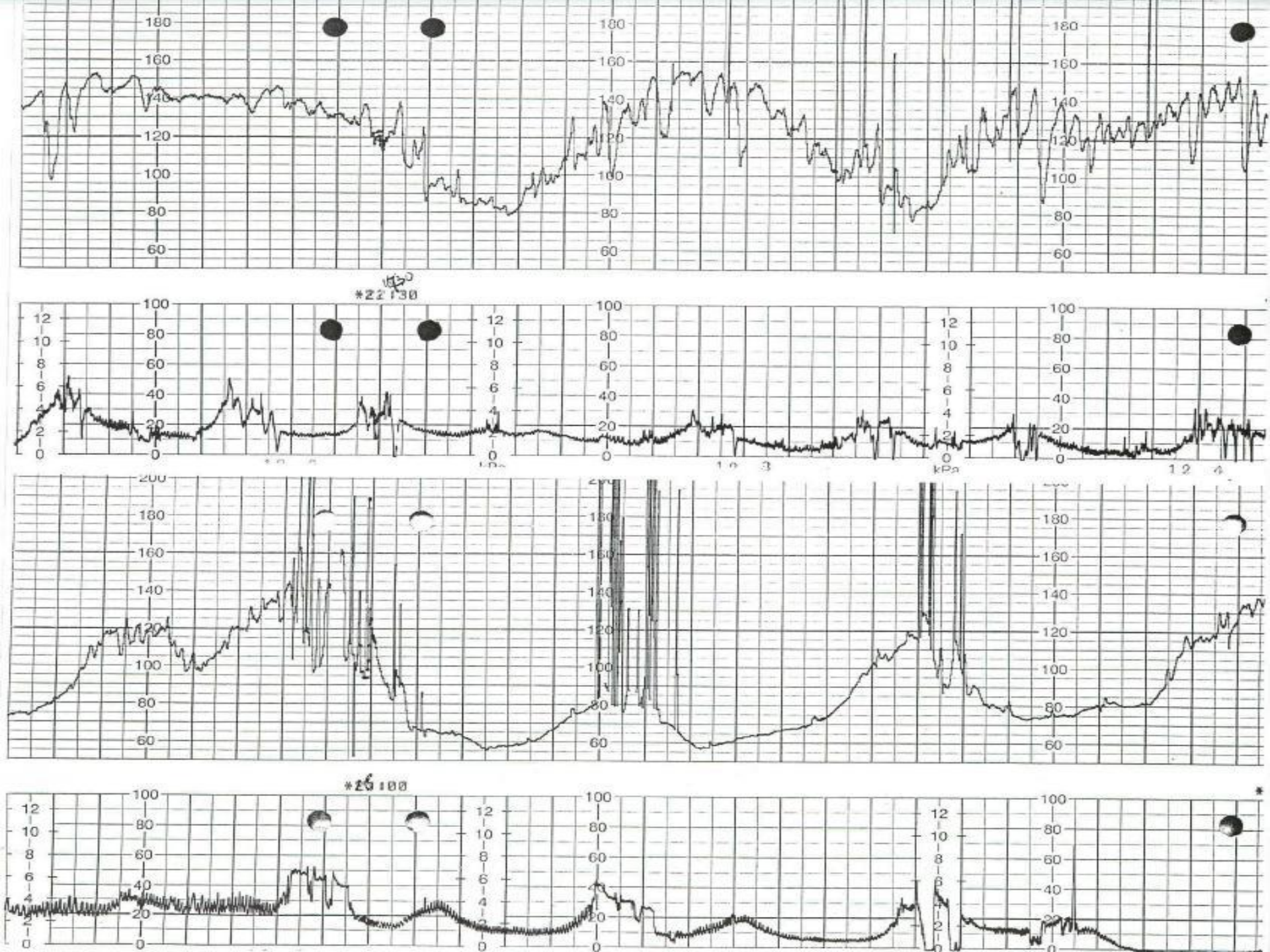
No effect on incidence of preterm birth or neonatal morbiditiy

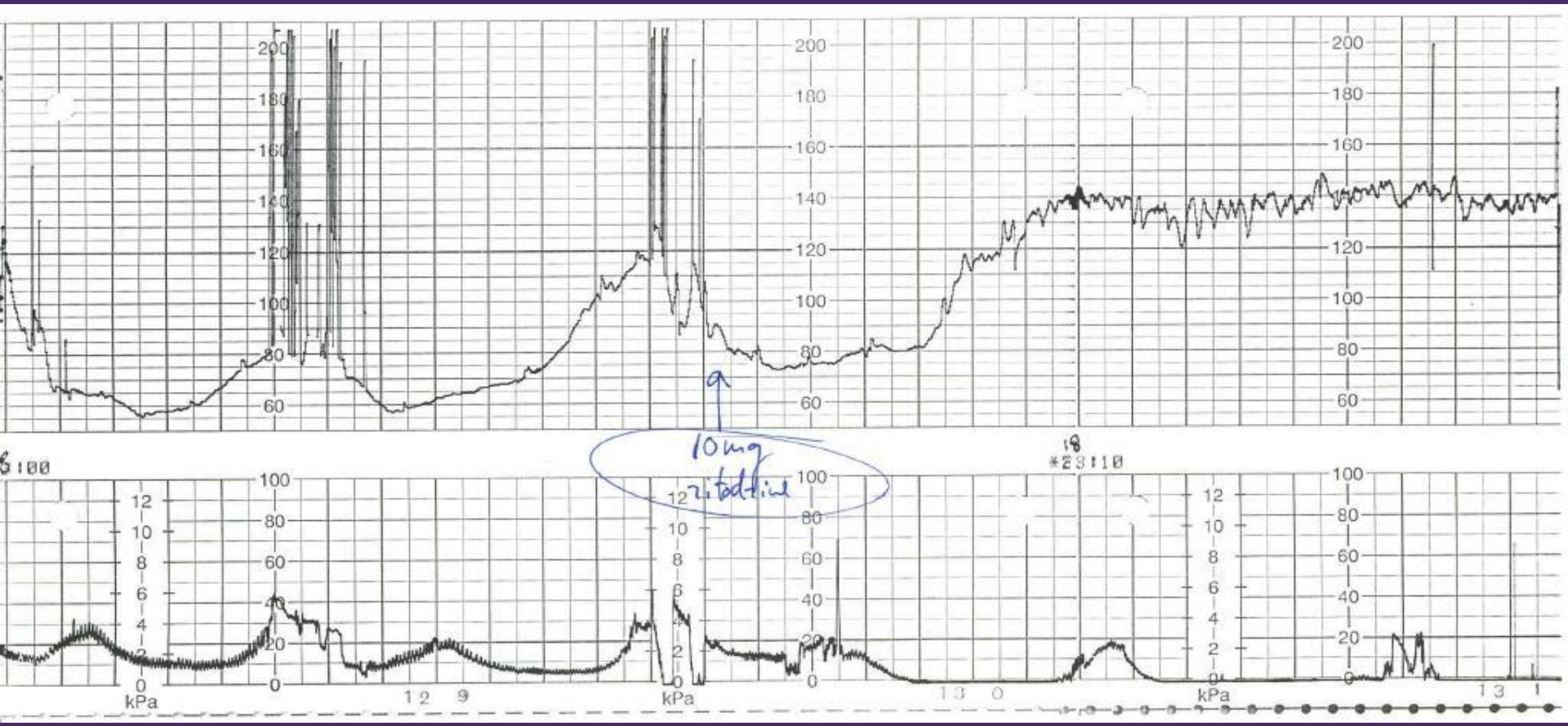
Cochrane databases: Papatsonis et al, 2009; Dodd et al, 2011; Gaunekaret al, 2010

Gr 1 P0 41^{+1} wks, breech position

- spontaneous ROM
- thick meconium
- first stage: 7 hours
- station o
- full dilatation


10 min
kPa
kPa
kPa


*22 130
kPa
kPa
*26 180


10mg
kPa
kPa
kPa

Outcome

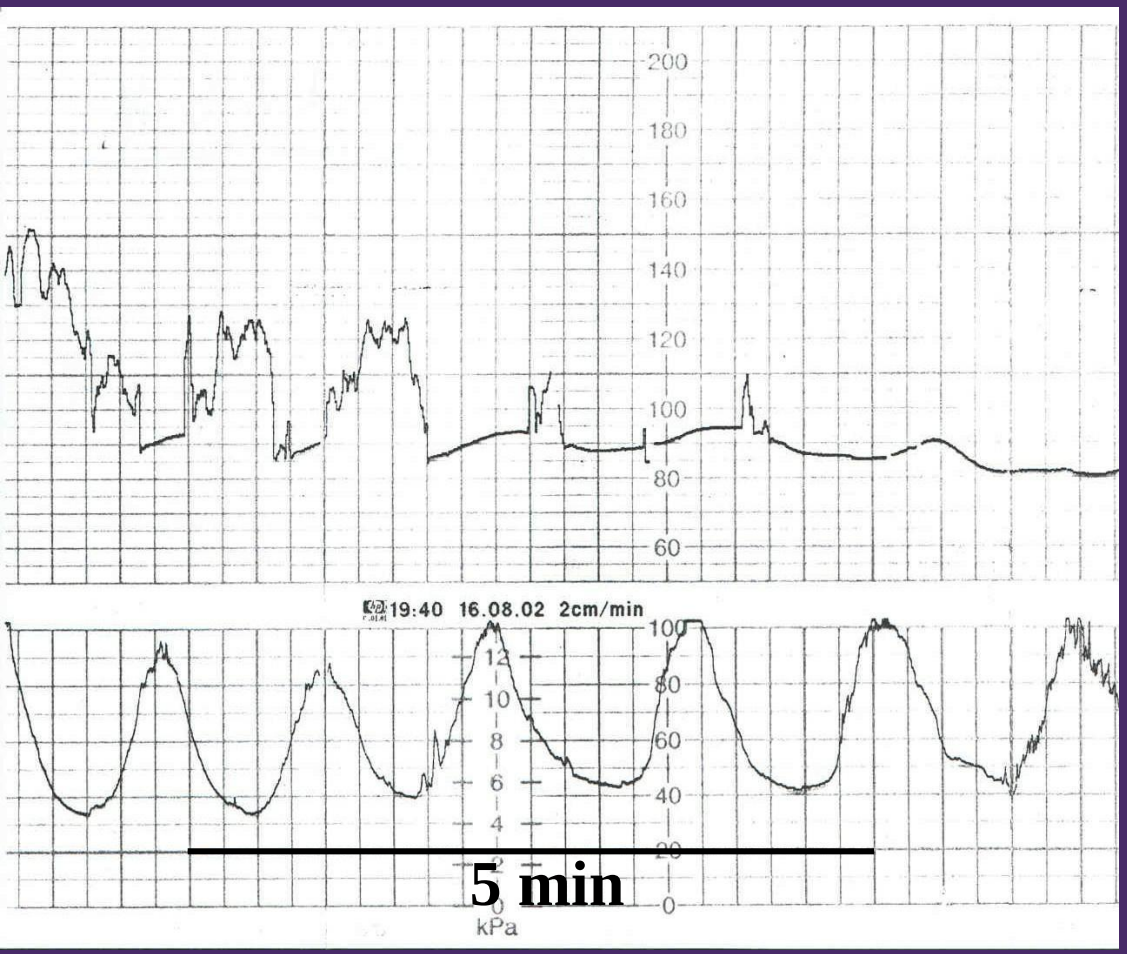
♀ 3100 g, SC

Apgar 9-10

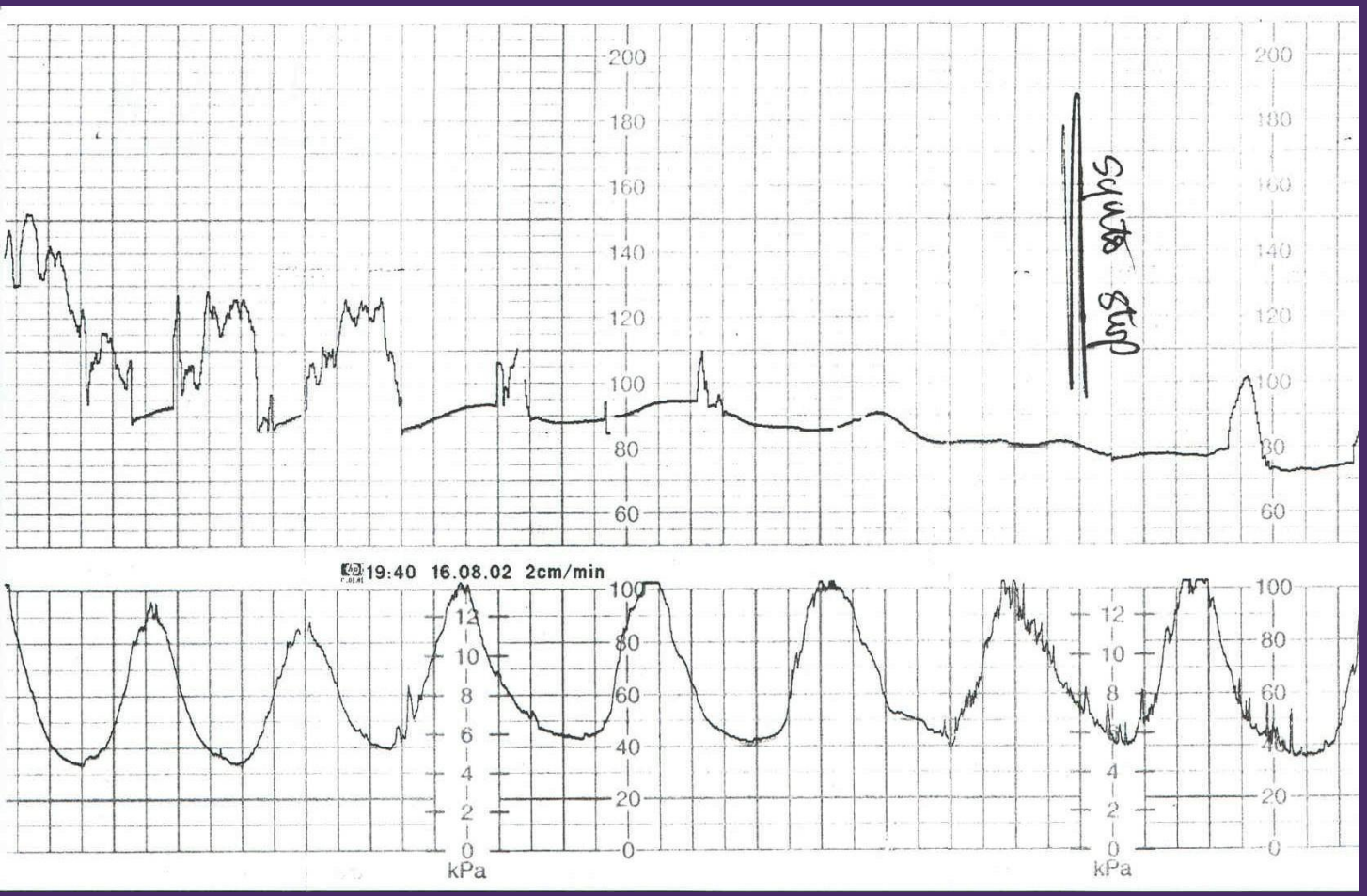
pH ua 7.19

pH uv 7.24

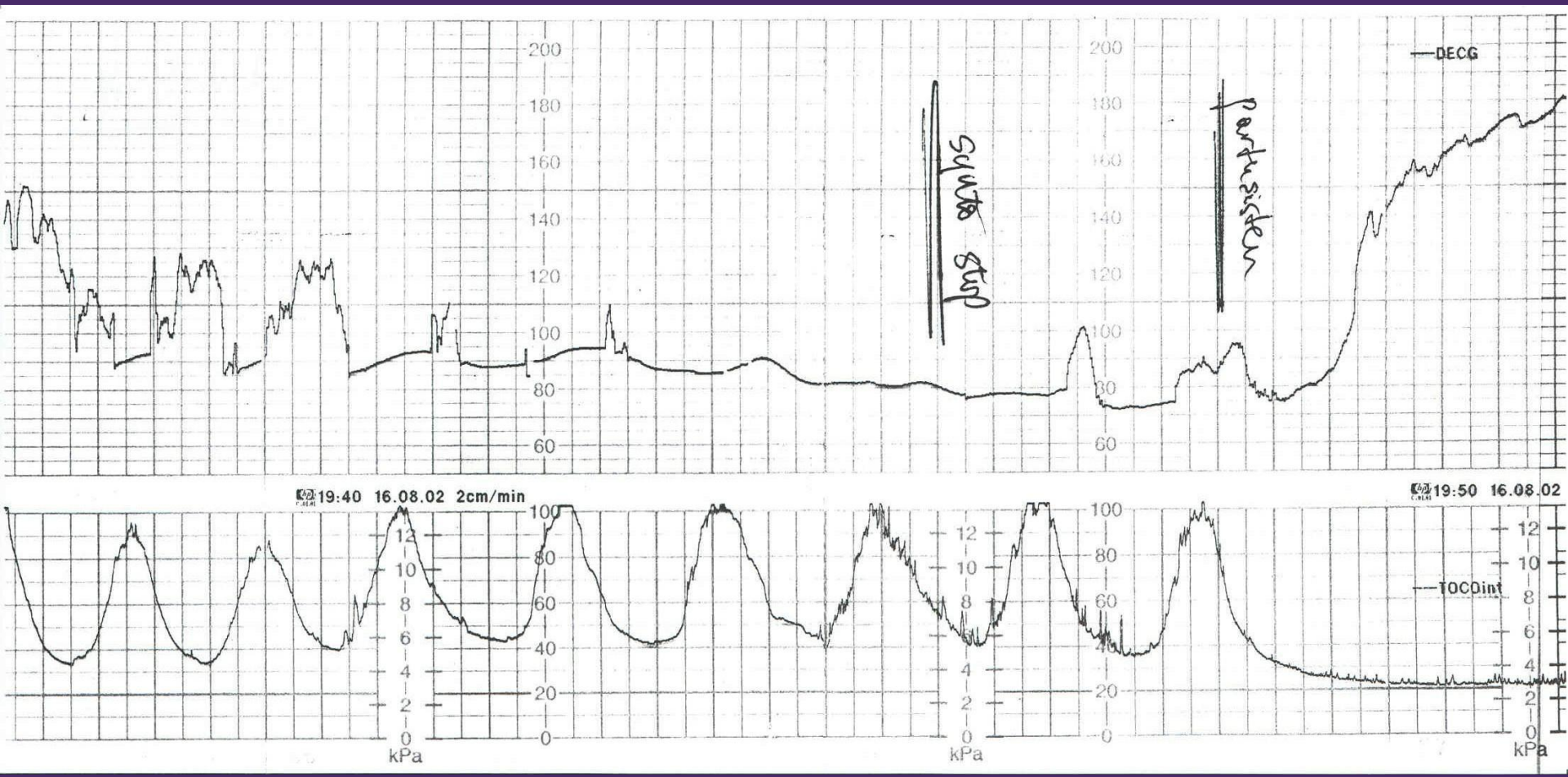
Induction of labour



Oxytocin stop



Tocolytic agent



Acute tocolysis during labour

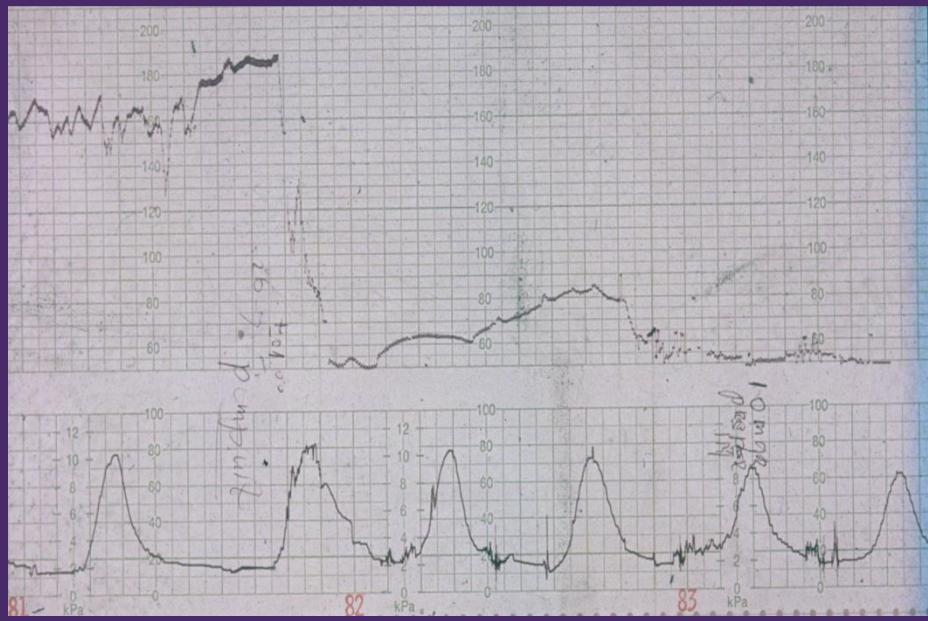
- To stop excessive (induced) uterine activity
- To gain time, reduce stress and improve the fetal condition in case of fetal asphyia in the process of organizing an (emergency) CS

Acute tocolysis during labour

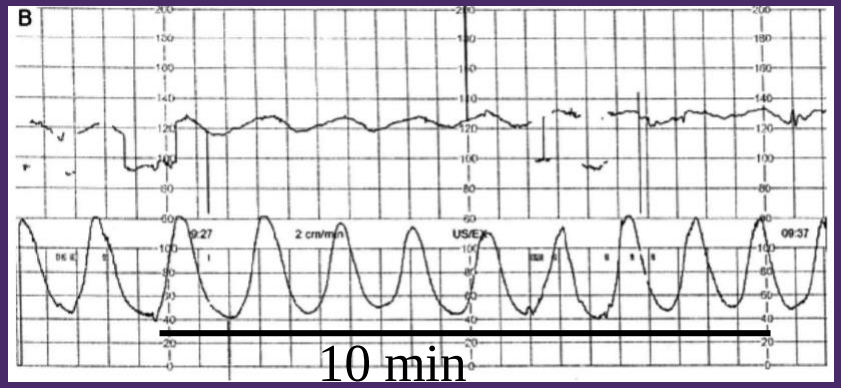
Fetal heart rate anomalies during labour are usually caused by (too frequent) contractions

Exceptions:

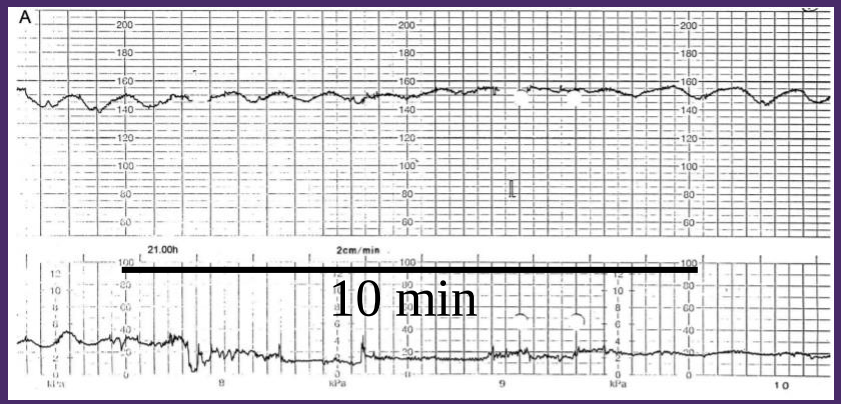
- Uterine rupture
- Placental abruption
- Rupture vasa praevia



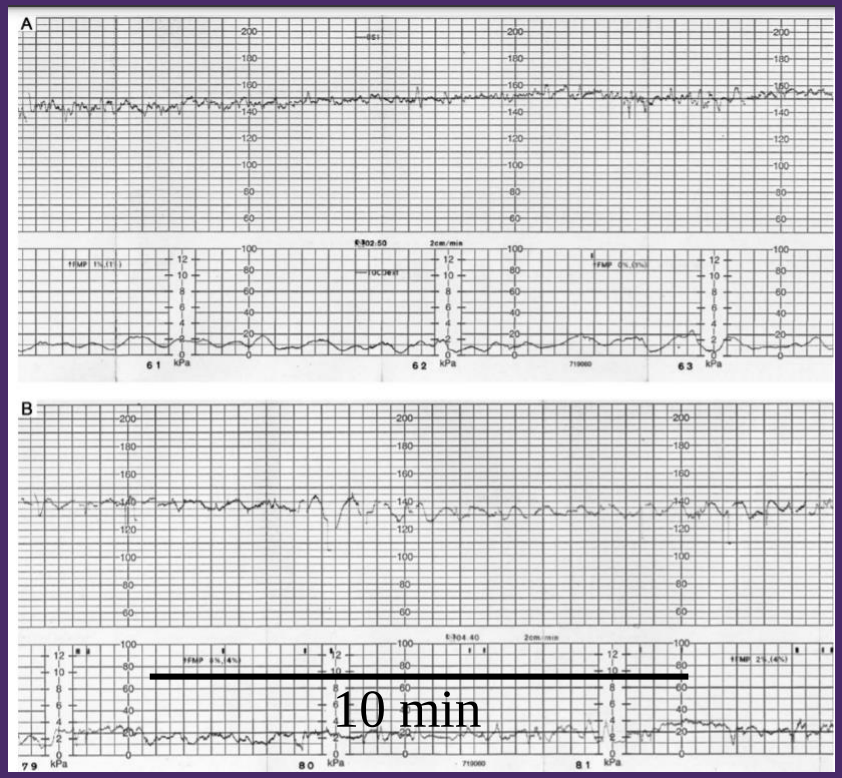
Spontaneous Tachysystole



Group A streptococ



Partial abruption



Partial abruption

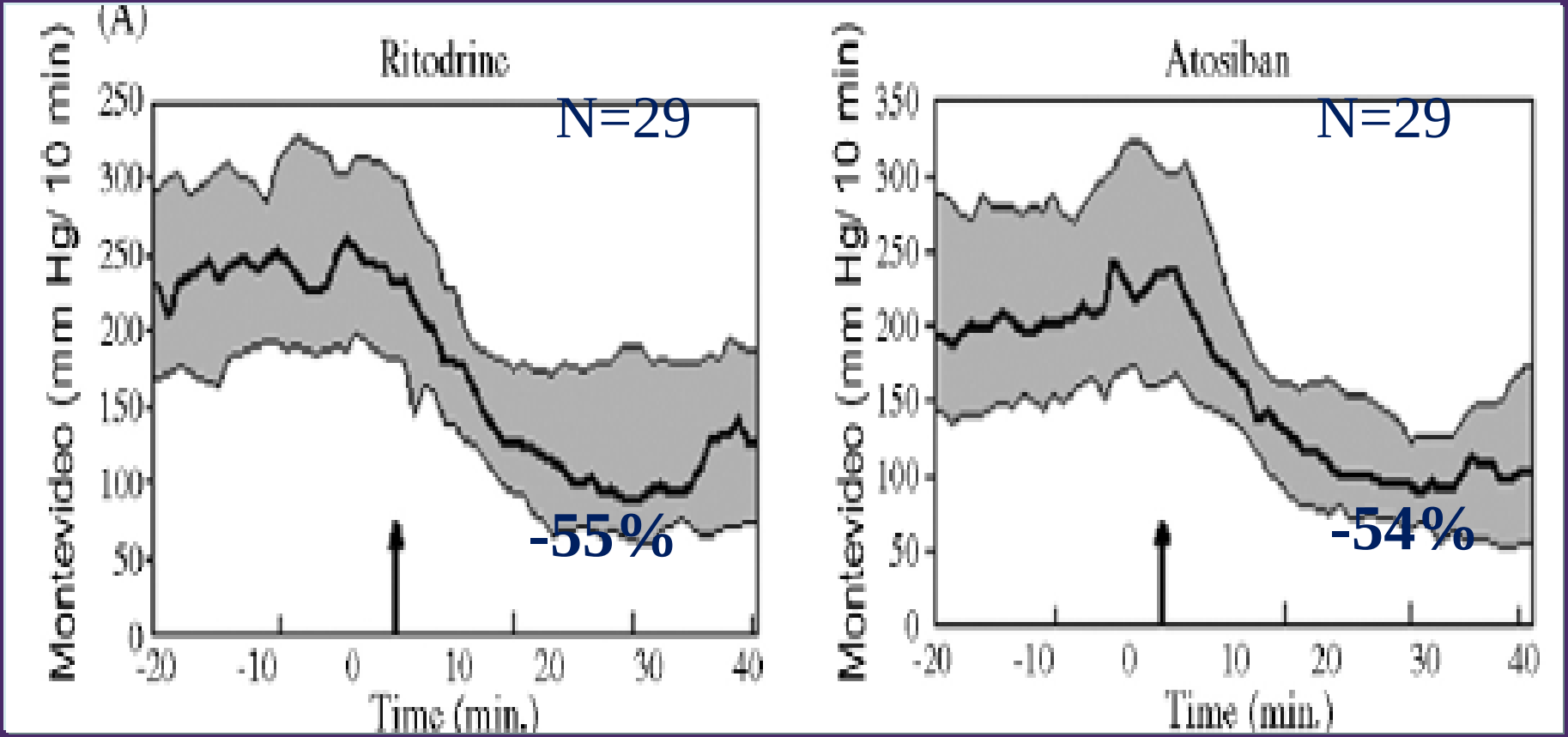
Strasser et al, JMFNMed 2010

6 RCTs intrapartum tocolysis

- B-mimetic drugs result in a 55-84% reduction of uterine activity
- Atosiban is promising, but limited evidence
- MgSO4 and nitroglycerin: unconvincing evidence
- Ca-channel blockers; unlikely to work

De Heus et al, Obstet Gyn Survey 2008

RCT Ritodrine vs Atosiban



Following ritodrine: sign increase mat & fetal heart rate. No diff in mat blood pressure, postpartum blood loss, fetal condition at birth

De Heus et al, Eur J Obstet Gynaecol Reprod Biol 2008;138:139-45

RCT immediate delivery vs acute tocolyis

Total n of patients: 390
Time to delivery 17 and 34 min, respectivey

	RR
pH umb art<7.10	1.47
Base def<12	1.48 (1.0-2.2)
Admission NICU	2.14 (1.2-3.7)

Briozzo et al, J Obstet Gyn Res 2007;33:266-73

Acute Tocolysis during labour

-tachysystole

-fetal asphyxia

Only few studies.

Likely to work

B-mimetics or atosiban

THANK YOU