



European Society of
Regional Anaesthesia
& Pain Therapy

ESRA ITALIA

ESRA Italian Chapter

XXVIII CONGRESSO NAZIONALE

PRESIDENTE
DEL CONGRESSO
Luciano Calderone

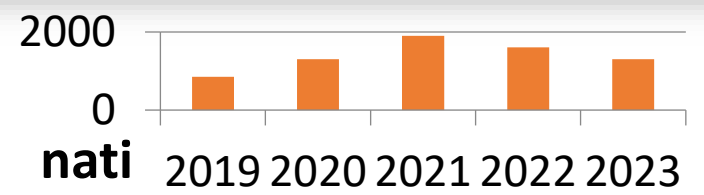




SIMULAZIONE di Anestesia, Analgesia ed Emergenza Ostetrica Deve nascere!

INTRAUTERINE FETAL RESUSCITATION: IMPACT OF ANALGESIA ON FETAL WELLBEING

• I Declare, no conflicts of interest



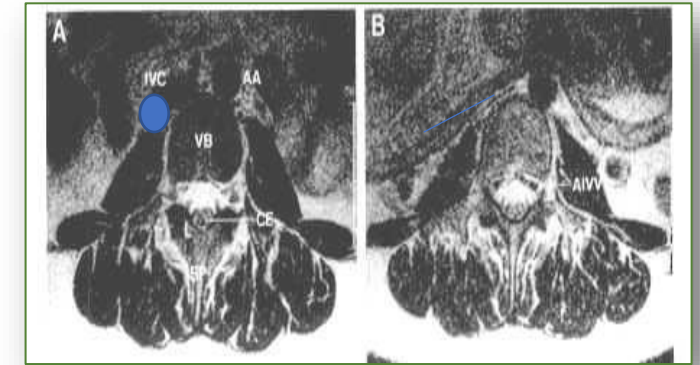
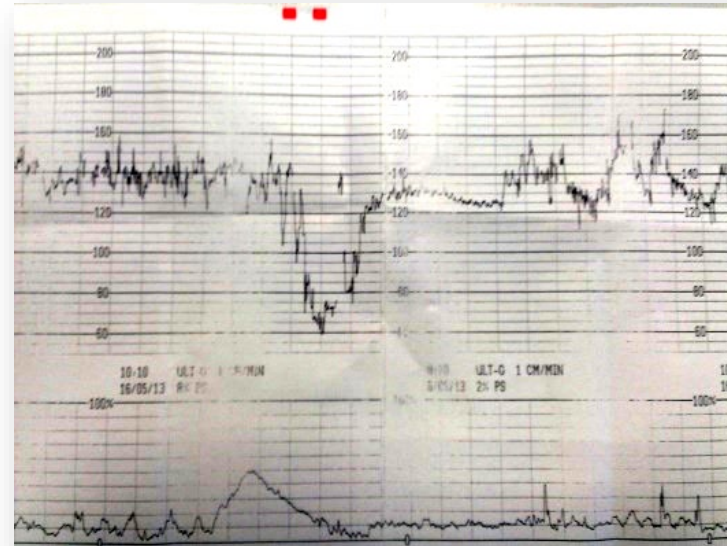
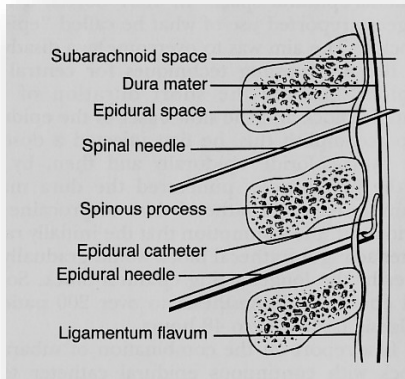


obre
CONGRESSO NAZIONALE



INTRAUTERINE FETAL RESUSCITATION: IMPACT OF ANALGESIA ON FETAL WELLBEING

• ONLY PAIN RELIEF ?



INCREASE NA/A RATIO

SYMPATHETIC BLOCK

INCREASED UTERINE CONTRACTILITY

VASOCOSTRICION OF UTERINE A.

HYPOTENSION

HYPOPERFUSION

A alfa	A beta	A gamma	A delta	B pregangliari	C
motorie	epicritiche	propriocettive	Algogene termiche	Simpatiche	termiche



PALERMO 5-7 Ottobre

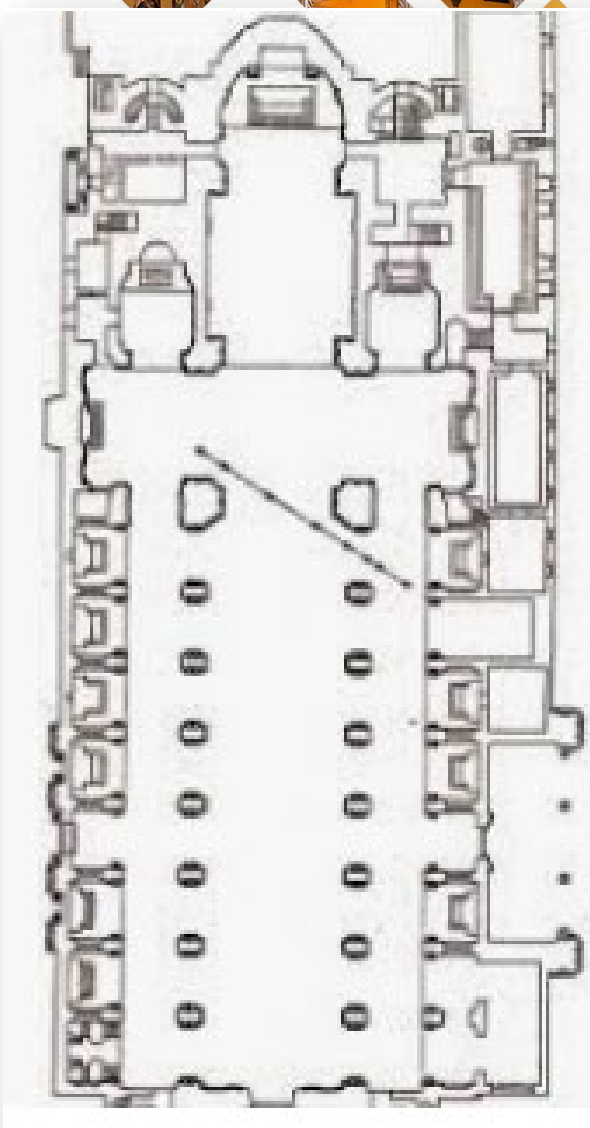
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Cattedrale di Palermo, plant

PAIN SCORE

TIMING

MONITORING

TECHNIQUE (CSE, Epidural EV, GAS)

DRUGS (pharmacodynamics)

DOSE

TEST

METHODE OF ADMINISTRATION

(Continuous, PCEA, PIEB, Taylored)

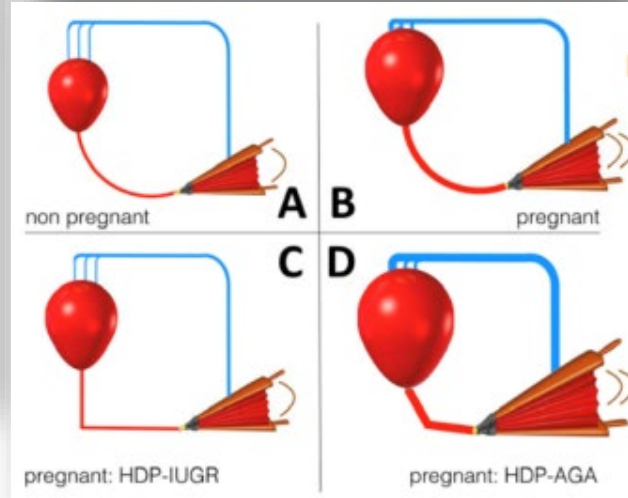
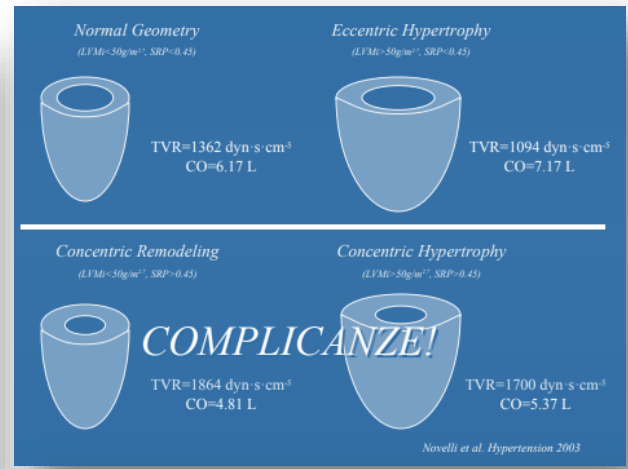
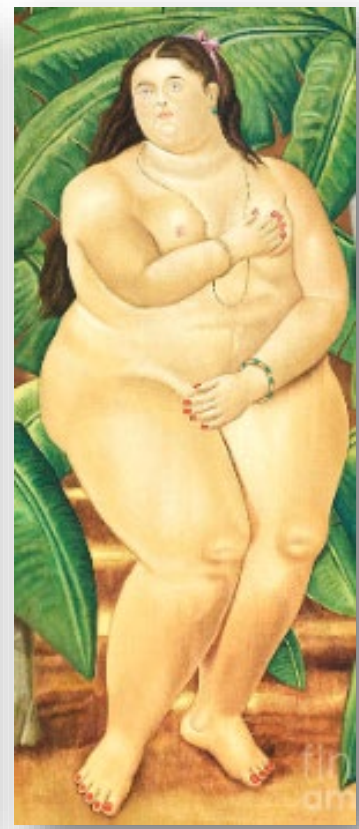
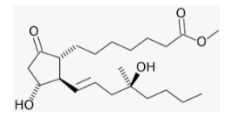
CONVERSION (or PLAN B)





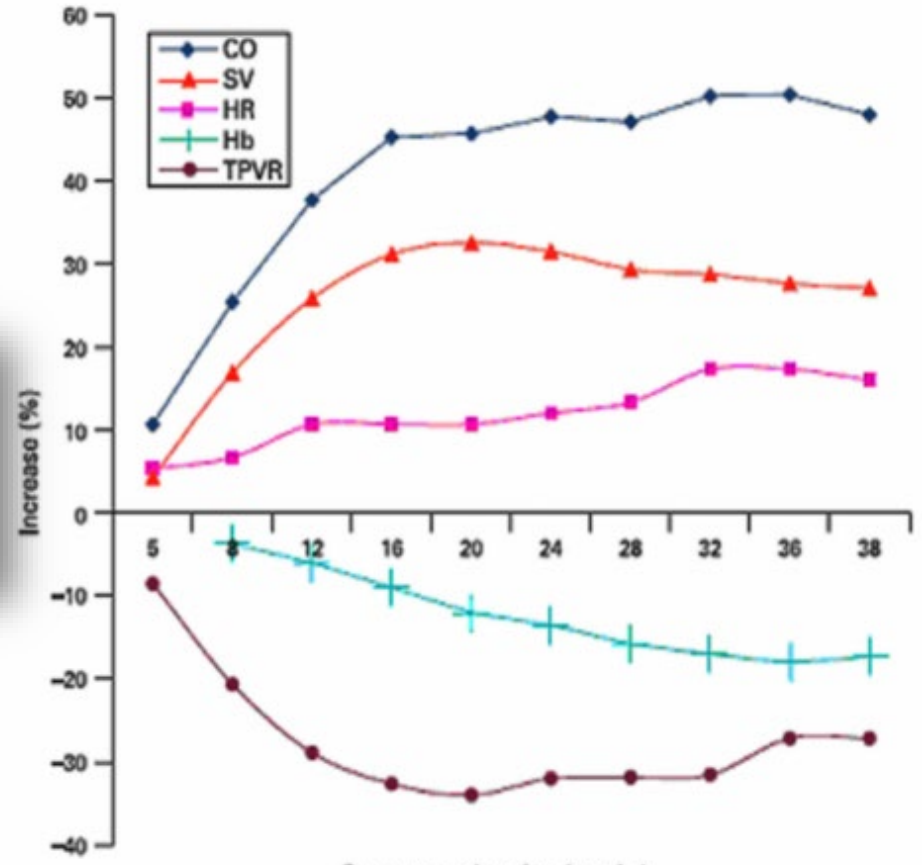
INTRAUTERINE FETAL RESUSCITATION: IMPACT OF ANALGESIA ON FETAL WELLBEING

- **What we know about :**
- Environment and Situation
- Pregnant (background, drugs)
- Risk factors
- Hemodynamic profile
- Labour
- Fetal status, growth





INTRAUTERINE FETAL RESUSCITATION: IMPACT OF ANALGESIA ON FETAL WELLBEING

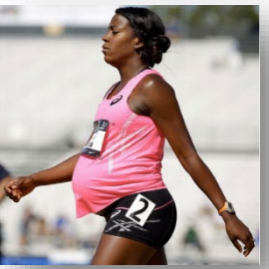


Hemodynamic changes in pregnancy

K L Thornburg¹, S L Jacobson, G D Giraud, M J Morton
Seminars in Perinatology, 2000

07/10/2023

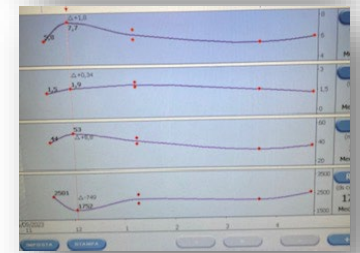
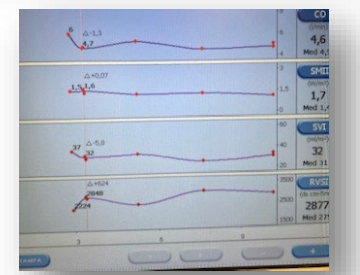
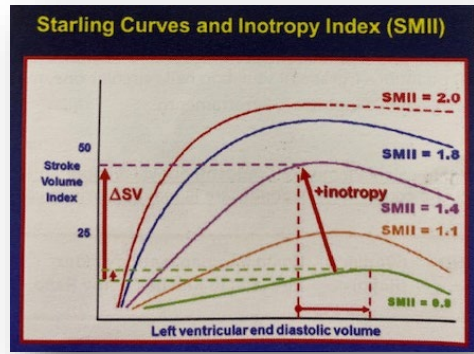
Chiara Spina Mater Dei Hospital Bari



↑ Flow rate

$$BP = SV \times HR \times SVR$$

↓ Resistances





INTRAUTERINE FETAL RESUSCITATION IMPACT OF ANALGESIA ON FETAL WELLBEING

AIM OF INTRAPARTUM FETAL SURVEILLANCE

To prevent adverse perinatal outcomes arising from fetal metabolic acidosis /cerebral hypoxia related to labour



Low risk of asphyxial damage



- Optimum reaction to hypoxemia
- Full compensation
- Characteristic signs of fetal distress

At risk of asphyxial damage



- Blunted reaction to hypoxemia
- Reduced compensation
- Variable signs of fetal distress

High risk of asphyxial damage



- Defense is lacking
- A minimal reaction to hypoxemia is seen
- Uncharacteristic signs of distress

T1 Consumption BE 1 mmol/L/ 3-6 h

T2 BE 1mmol/L x h

Mild Hypoxia	BE 1 mmol/L 30 '
Moderate Hypoxia	BE 1 mmol/L 6-15 '
Severe Hypoxia	BE 1 mmol/2-3 '

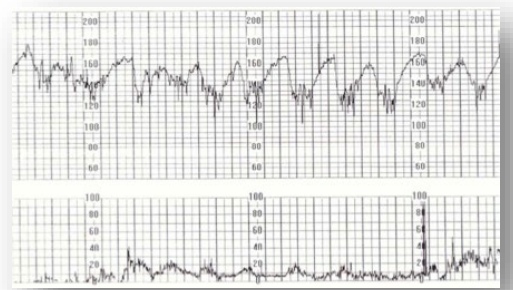
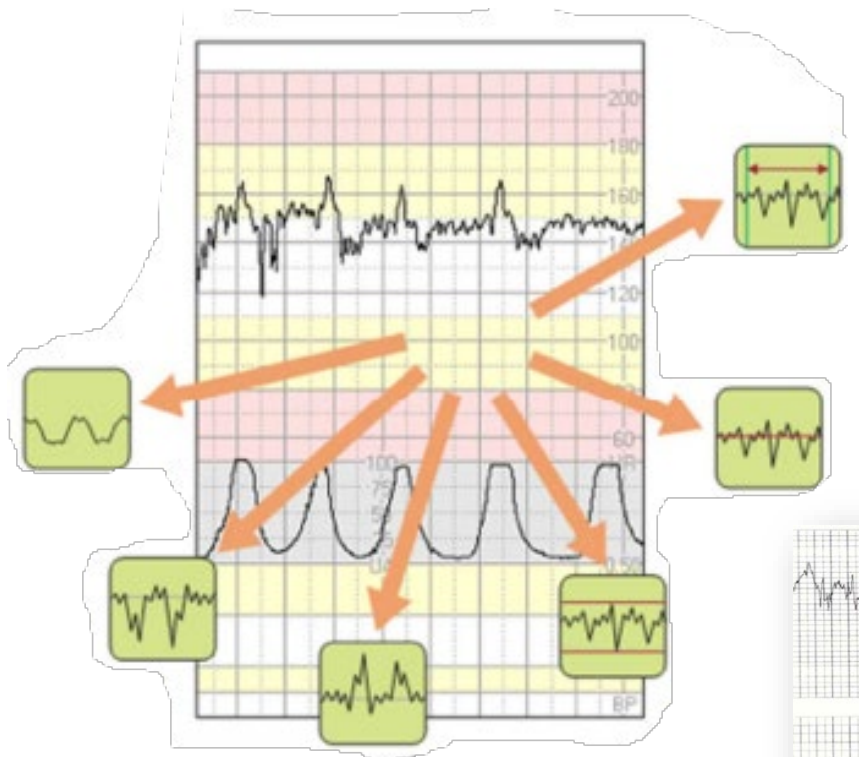
Am J Obstet Gynecol. 2002 Jul;187(1):1-9. ROSS MG
 Use of umbilical artery base excess: algorithm for the timing of hypoxic injury.



CARDIOTOCOGRAPHY A WINDOW TO THE FETUS



Known and Appropriate Terminology



Influenced

FETAL MOVEMENTS



CHANGES IN PLACENTAL FLOW AND MATERNAL POSITION



DRUGS and VOLUME



HYPOXIA



EXTERNAL STIMULATION



TEMPERATURE





INTRAUTERINE FE

IPERTONO UTERINO: BRADICARDIA FETALE / FETAL BEING

Ipossia acuta: bradicardia prolungata

“La regola d'oro è: 3 minuti di ipertono uterino = 3 minuti di bradicardia fetale”

3': Allerta! Rivalutare il pattern CTG

6': Attendere il ritorno della FHR alla normale

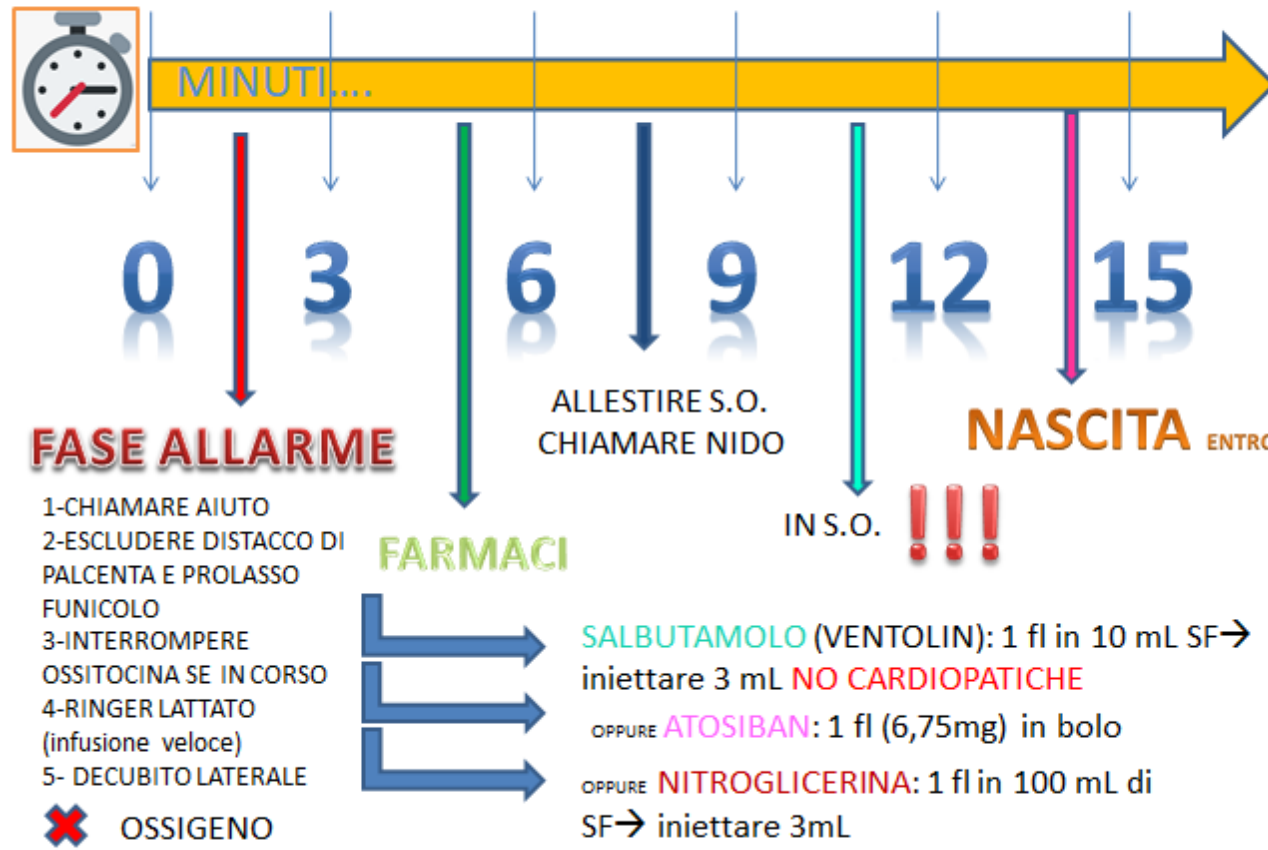
9': Se permane bradicardia, predisporre il parto

12': Inizio intervento

15': Nascita

RICORDA: Bradicardia > 20' = rischio di asfissia fetale, ipertensione materna, eventi e sequele neurologiche

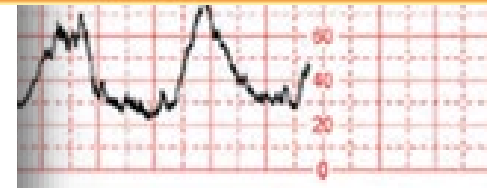
NB Bradicardia < 100bpm, > 15' = rischio di asfissia fetale



A 9 MINUTI IL 95% DELLE BRADICARDIE SI RISOLVE SPONTANEAMENTE, - 0,01/0,04 PUNTI DI ph AL MINUTO

-Monitoraggio cardiotocografico in travaglio (SIGO-AOGO 2018)

- Regione Lombardia**
- 1 - 3 minuti**
 - Diagnosi di DP
 - Inizio manovre conservative (camposizione materna, sospensione ossitocina se in corso, idratazione ev, ossigeno in maschera (solo se di ipossia materna)
 - Allertare ginecologo
 - 4 - 9 minuti**
 - Analizzare cause (ipotensione materna, ipertono, tachisistolia, prolasso di funicolo)
 - Tocolisi acuta (se necessario): Mio 1fl in 500 cc sol fisiologica rapida Atosiban 6,75mg bolo lento ev
 - 9 - 12 minuti**
 - Se risoluzione della decelerazione prolungata - osservazione clinica
 - Se non risoluzione TC immediato: possibilità di parto vaginale imminente
 - Allertare anestesista e neonatologo
 - 13 - 15 minuti**
 - Ingresso pz in sala operatoria
 - Valutazione tipo di anestesia
 - Rilievo frequenza cardiaca fetale
 - Nascita



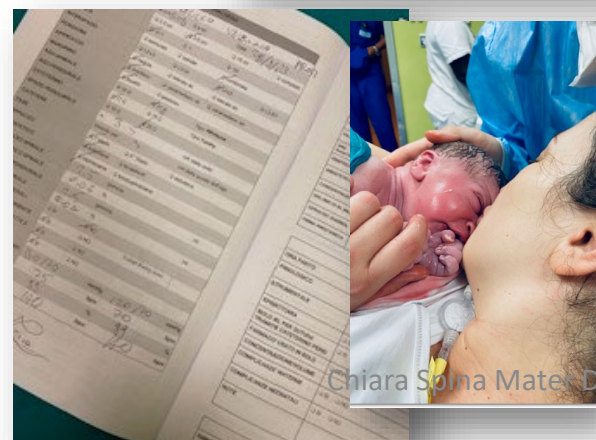
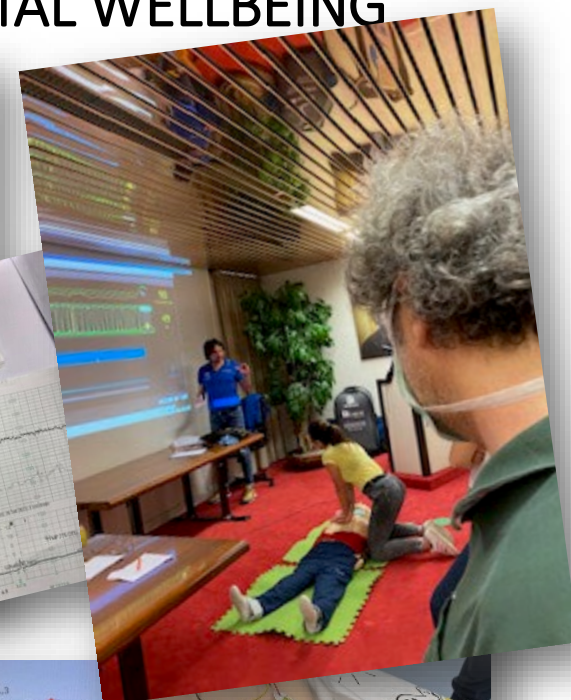
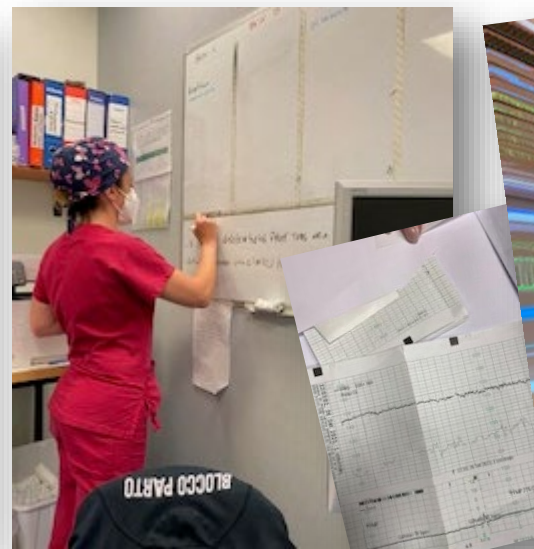
LEUNG et Al. 2013



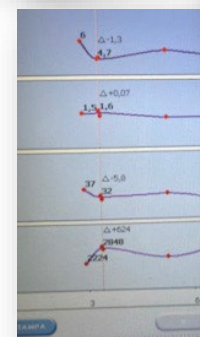
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- What we do ?
- Communicate
- Monitoring
- Valuation
- Technique, dose
- Revaluation
- Childbirth
- Recovery
- **Registration**

07/10/2023



Discussion time
Simulation





The Journal of Maternal-Fetal Medicine

Publication details, including instructions for authors, are available at <http://www.tandfonline.com/loi/ijmf20>

Foetal heart rate decelerations during spinal-epidural analgesia during labor: a haemodynamic cardiac study

Herbert Valensise^a, Damiano Lo Presti^a, Grazia Gagliardi^a, Barbara Vasapollo^a & Maria Grazia Fatebenefratelli^a

^a Department of Obstetrics and Gynaecology, Fatebenefratelli San Giovanni Calibita Isola Tiberina, Rome, Italy
^b Department of Anaesthesiology, Ospedale Fatebenefratelli San Giovanni Calibita Isola Tiberina, Rome, Italy
 Published online: 03 Sep 2015.

MATERNAL-FETAL MEDICINE

Maternal hemodynamic changes during labor with epidural analgesia

Stefano Raffaele Giannubilo^{1,3}

07/10/2023

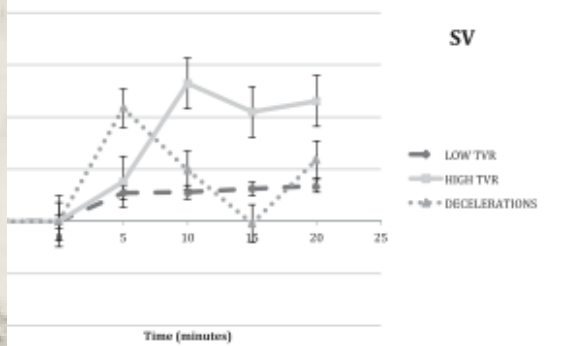


And TEAM
 Resuscitation!
 Grazie!

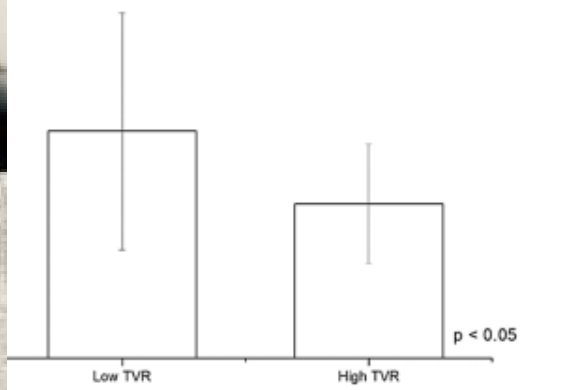
of maternal

sani, Grazia Maria Tiralongo, Barbara Vasapollo & Gian Paolo Novelli

heart, epidural analgesia and FHR decelerations 5



An increase of stroke volume was seen after analgesia in high Total Vascular Resistances groups.



Short term variation at computerized cardiotocography in the fetus with low Total Vascular Resistances (Low-TVTR) and with high Total Vascular Resistances (High-TVTR)



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