

**EVALUATION OF HEMODYNAMIC  
CHANGES, COMPLICATIONS OF  
LEVOBUPIVACAINE COMBINED WITH  
SUFENTANIL IN SPINAL ANESTHESIA  
FOR CAESAREAN SECTION**

*Dr Ma Thanh Tung*

*Dr Trương Quốc Việt*

*Prof Nguyễn Văn Chung*

# INTRODUCTION

- Anesthesia for caesarean section: difficult and safe
- Regional anesthesia = “gold standard”
- Role of spinal anesthesia in CS
- Levobupivacaine > Bupivacaine
- Sufentanil > Fentanyl
  - ⇒ Levobupivacaine + Sufentanil / CS

# OBJECTIVES and METHODS

- To evaluate the hemodynamic changes
- The complications of combination Levobupivacaine and Sufentanil in spinal anesthesia for CS
- Prospective studies, clinical application. Applying for emergency and elective sections

# RESULTS and DISCUSSION

- General characteristics (n = 155)

<b>characteristics</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>
Age	19	42	26,82 ± 5,45
Weight before Pre (kg)	44	73	55,23 ± 8,46
Height (m)	1,51	1,68	1,57 ± 1,23
BMI (kg/m <sup>2</sup> )	18,62	26,33	22,12 ± 4,68

**Bowring J (UK):** average age 30,80 ± 0,80

**Bremerich DH:** „ 30 ± 3

**Gautier P :** „ 30 ± 4

**Parpaglioni R:** „ 34,46 ± 3,97

# RESULTS and DISCUSSION

- PARA

PARA	Frequency	Rate
Nulliparous	74	47,74%
Multiparous	81	52,26%

- Gestational age

	Min	Max	Average
<b>GA</b>	35	41	39,12 ± 1,25

- With 149/155 > 37 weeks (96,13%),
- **Bowring J** 38,20 ± 0,50 ws, **Marcel PV** 39 ± 1 ws,  
**Parpaglioni R** 39 ± 1,40 ws
- **Petropoulos G** > 34 ws

# RESULTS and DISCUSSION

- Medical history

	Frequency	Rate
Non	130	83,87%
Asthma	8	5,16%
Mild pre-eclampsia	6	3,87%
Diabetes	5	3,22%
Goiter	3	1,93%
High liver enzymes	3	1,93%

# RESULTS and DISCUSSION

- Diagnosis

Diagnosis	Frequency	Rate
<b>Previous CS</b>	<b>67</b>	<b>43,22%</b>
Breech presentation	21	13,56%
CPD	18	11,62%
Failure to Progress	17	10,96%
Unfavorable cervix	10	6,45%
Older pregnant women	9	5,80%
Mild pre-eclampsia	3	1,93%
Premature membrane rupture	3	1,93%
Others	7	4,52%

# RESULTS and DISCUSSION

- Type of surgery

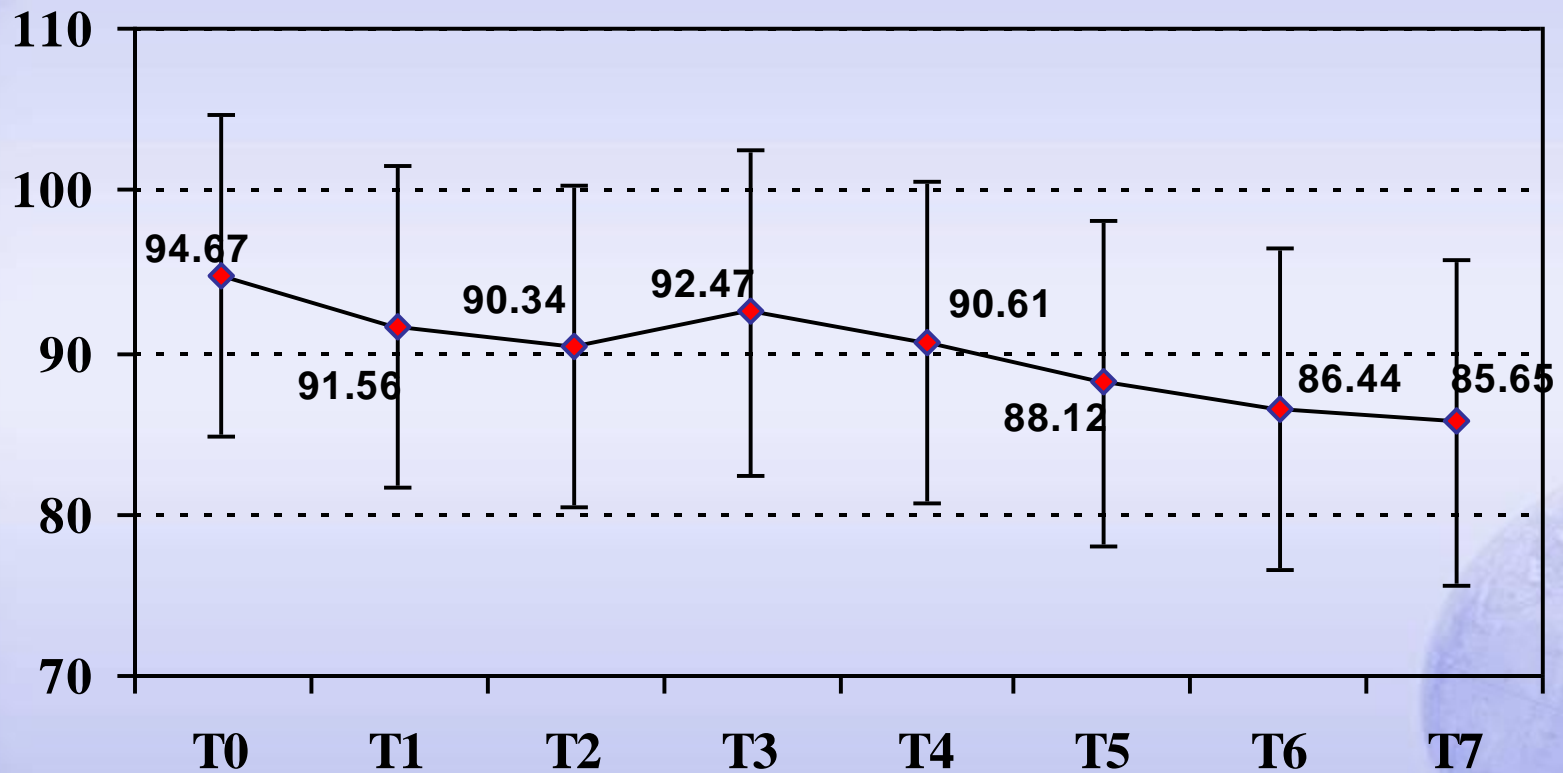
	Frequency	Rate
Emergency	58	37,42%
Elective	97	62,58%

- **Algert CS + Bremerich DH:** both
- **Bowring J:** Emergency
- **Bremerich DH, Gautier P, Petropoulos G:** Elective



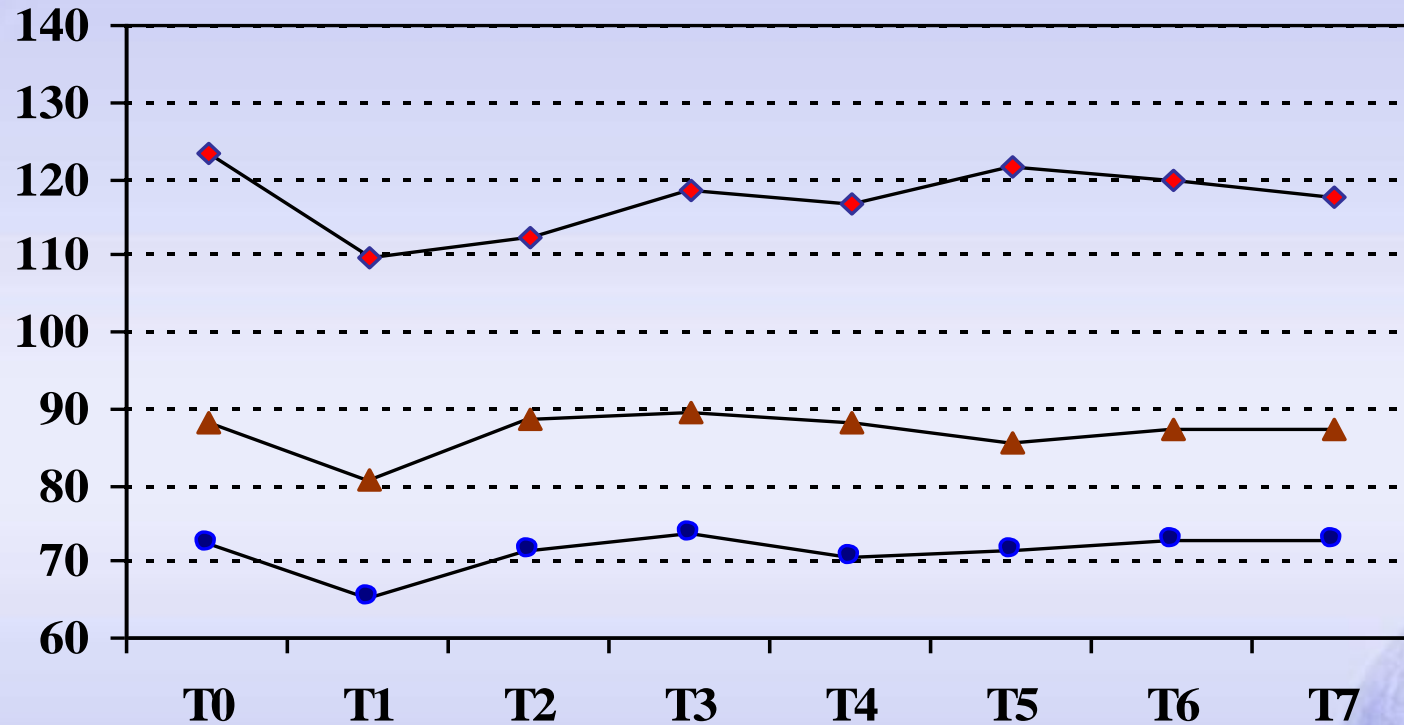
# RESULTS and DISCUSSION

- Heart rate



# RESULTS and DISCUSSION

- Blood pressure

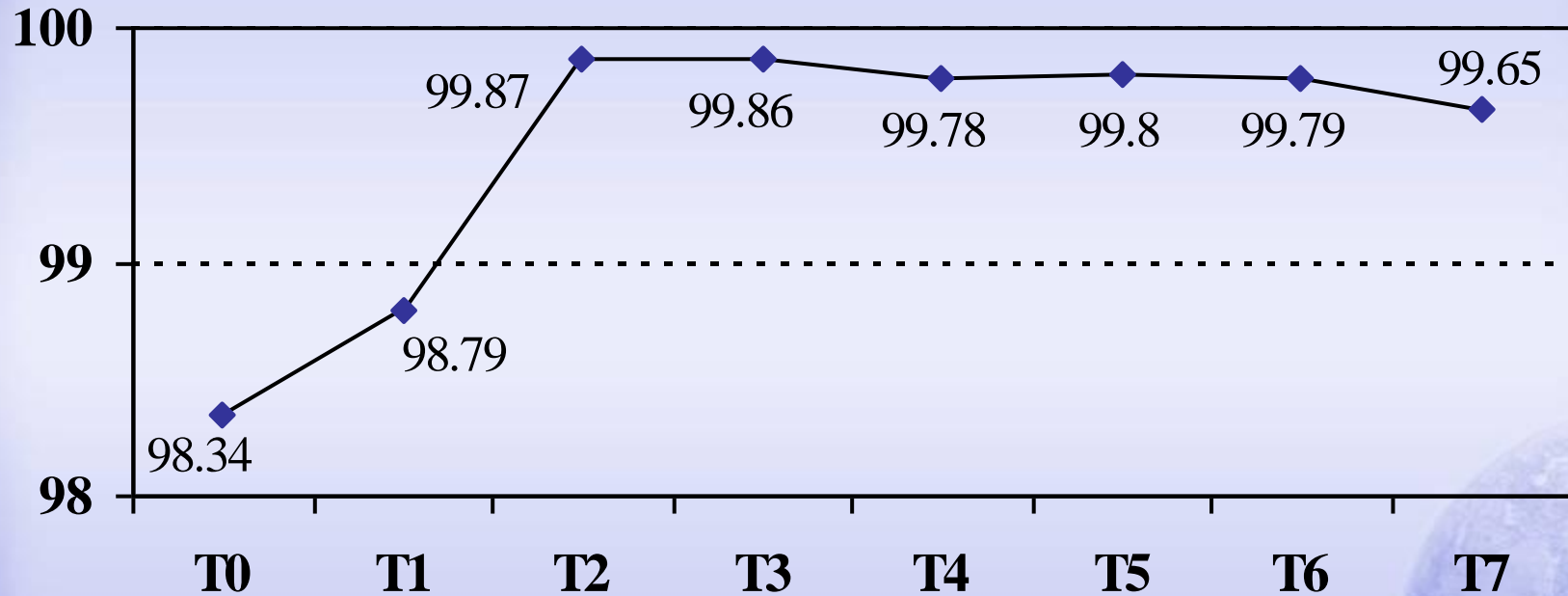


- 74,2% stable

- 25,8% decrease > 25% → Ephedrine IV

# RESULTS and DISCUSSION

- $SpO_2$



# RESULTS and DISCUSSION

- Time of CS

	Frequency	Rate
$\leq 60$ min	136	87,74%
$> 60$ min	19	12,26%

- Bremerich DH: L-Bupi + Sufen:  $28 \pm 18$  min
- Gautier P:                   ,,                    $58 \pm 13$  min
- Parpaglioni R:               ,,                    $48 \pm 11$  phút,

# RESULTS and DISCUSSION

- Apgar score

Apgar	Average
1 min	6,95 ± 0,24
5 min	8,56 ± 0,73

- **Bowring J:** 1 min =  $7,70 \pm 0,3$  ; 5 min =  $9,5 \pm 0,1$
- **Bremerich DH:** 1 min = 8 ; 5 min = 9
- **Marcel PV:** 1 min  $\leq 7$  (19%) ; 5 min  $\leq 8$  (22%)

# RESULTS and DISCUSSION

- Neonate weight

	Frequency	Rate
< 2500 gram	9	5,80%
2500 - 3500 gram	99	63,87%
> 3500 gram	47	30,33%

- NW > 2500 gram: 94,20%
- **Marcel PV:** L-Bupi: 3450 gram, Bupi: 3350 gram

# RESULTS and DISCUSSION

- Complications

	Frequency	Rate
<b>Non</b>	<b>99</b>	<b>63,87%</b>
<b>Hypotension</b>	<b>40</b>	<b>25,80%</b>
Vomiting	12	7,74%
Bradycardia	4	2,59%

- **Bremerich DH:** 40% vomiting
- **Marcel PV:** no hypotension, 3% vomiting
- **Parpaglioni R:** 20,40% hypotension, no vomiting and bradycardia

# RESULTS and DISCUSSION

- More treatments

	Frequency	Rate
<b>Ephedrine</b>	<b>47</b>	<b>30,32%</b>
Primperan	12	7,74%
Atropine	4	2,59%

- 47/155 cases need more Ephedrine (30,32%)
- **Cyna AM:** Ephedrine > Crystalloids to treat hypotension



# CONCLUSION

Based on our data, the combination of Levobupivacaine with Sufentanil in spinal anesthesia for CS:

- A right and reasonable selection
- The effective anesthesia is good
- Hemodynamic stability during surgery
- The low rate of complications and may not on the health of mother and neonatal

*Thank you!*

