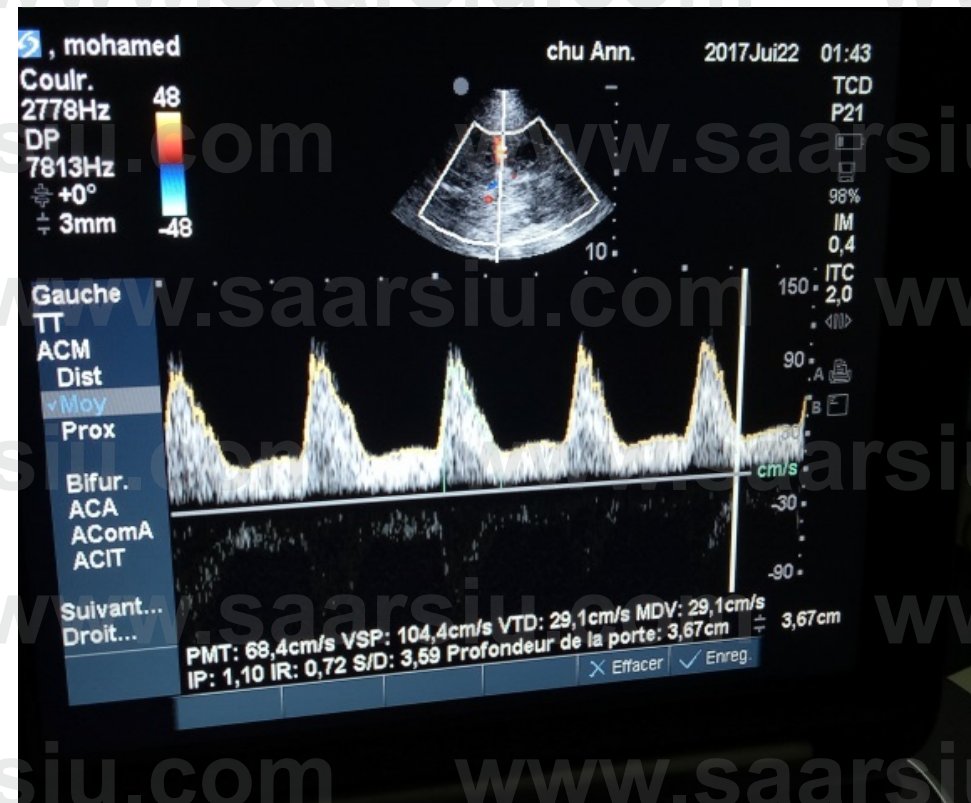






Induction en neurochirurgie et l'hémodynamique cérébrale évaluée par le doppler transcrânien

Chellia H, Makhlouf H, Benkara H, Beggari, Djebien M



INTRODUCTION

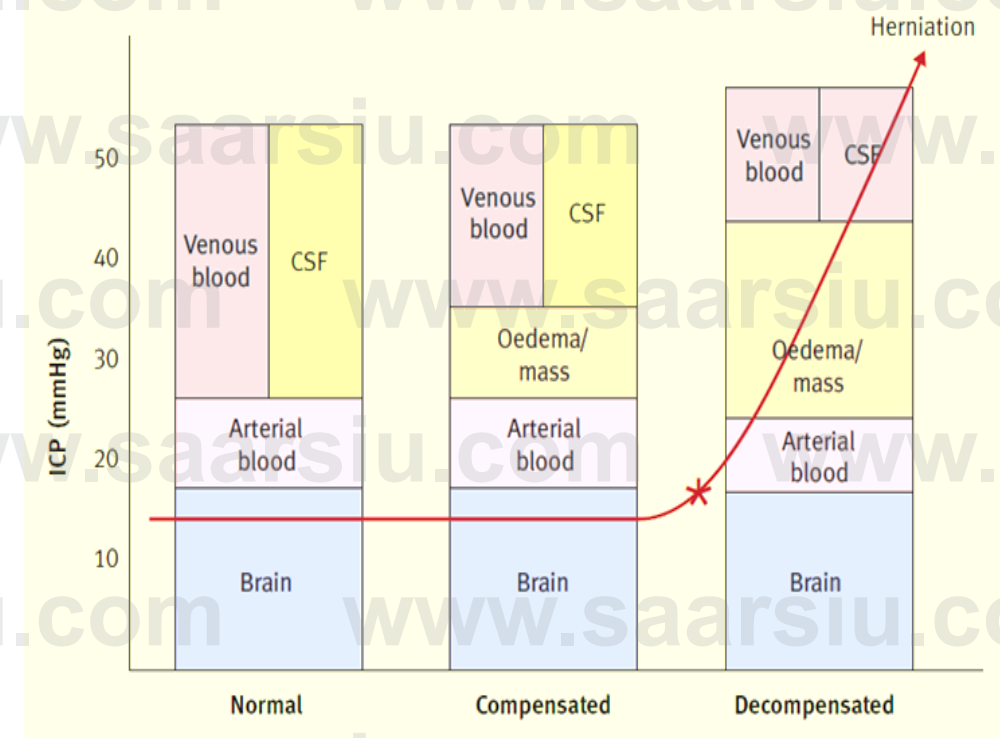
- Induction en anesthésie associé à la laryngoscopie et l'intubation peuvent entraîner une augmentation de la PIC surtout chez les patient avec une diminution de la compliance

Mosse, Br J anesth 1978

Miler, 2013

- Une HIC chez le cérébro-lésé est associée à un mauvais pronostic

Takefumi Sakabe, 2016. Elsevier



Doctrine de Monro- Kellie et volume de compensation

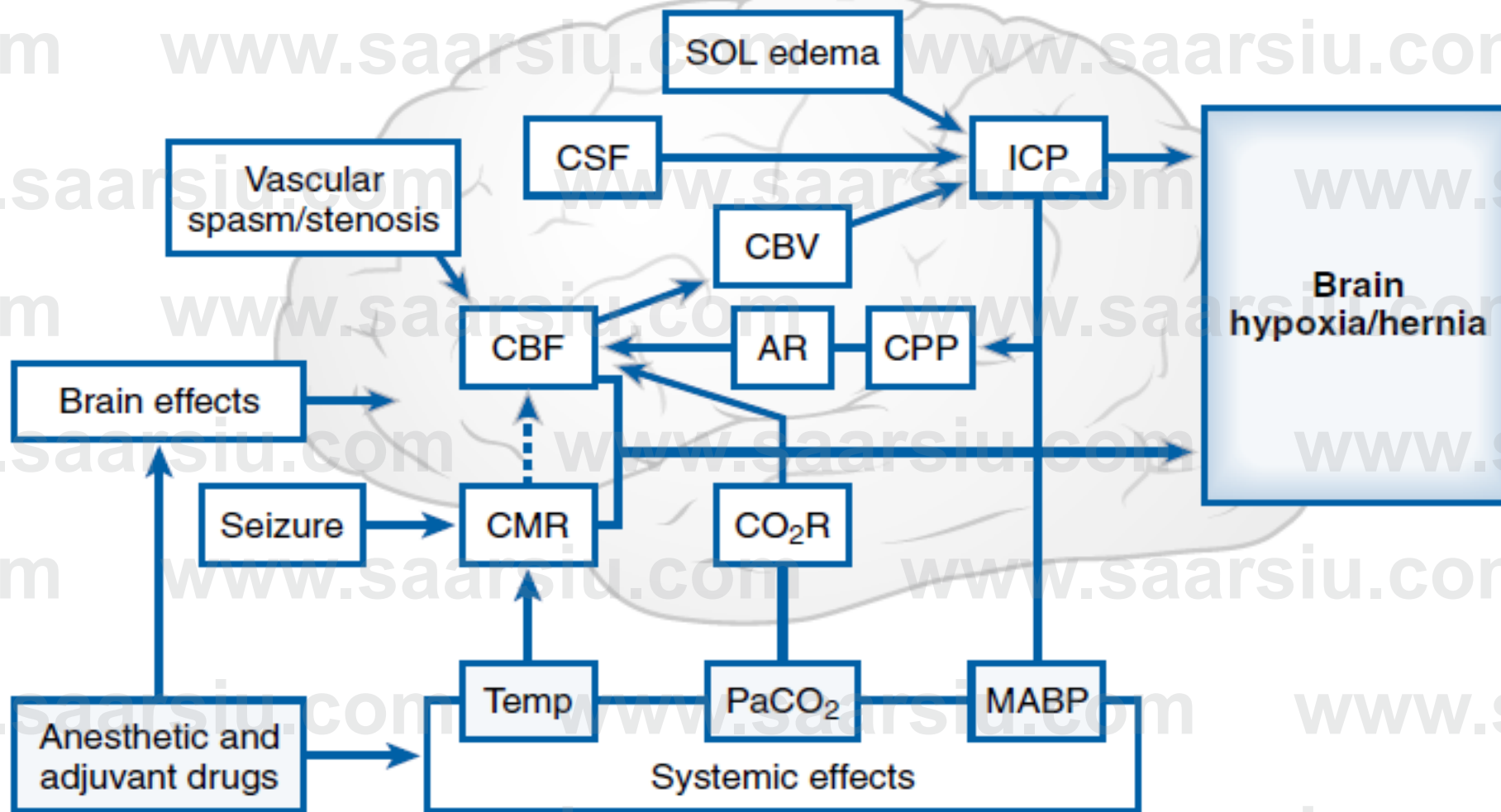
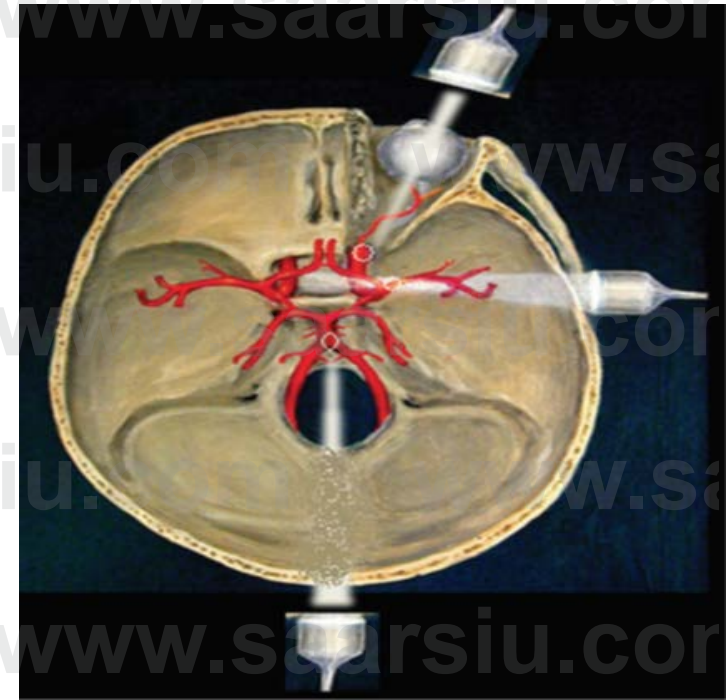


Figure 5-1 Intracranial physiology and pathophysiology in relation to the use of anesthetics and adjuvant drugs. The interaction of brain effects with the systemic effects of anesthetics and adjuvant drugs must be considered. Improvement of oxygen (substrate) supply/demand balance and prevention of intracranial hypertension are key points to prevent brain tissue hypoxia or ischemia and brain herniation and to obtain a better outcome. AR, autoregulation; CBF, cerebral blood flow; CBV, cerebral blood volume; CMR, CO₂R, cerebrovascular reactivity to CO₂; ICP, intracranial pressure; MABP, mean arterial blood pressure; SOL, space-occupying lesion; Temp, temperature.

DOPLER TRANSCRANIEN



Principe : une technique de Doppler pulsé qui permet d'enregistrer le flux ou la vitesse des globules rouges dans les gros troncs artériels intracrâniens. Le signal Doppler émis est réfléchi par le contact avec les globules rouges.





Objectif

Evaluer l'effet de l'induction cérébrale avec le propofol, sufentanil, rocuronium ainsi que l'intubation sur la circulation cérébrale chez les patients subissant une intervention en neurochirurgie et en particulier pour tumeur cérébrale.





Matériel et méthode

Type d'étude :

étude prospective descriptive de 32 patients

Critères d'inclusion:

ASA 1 ou 2, subissant une intervention neurochirurgicale.

Critères d'exclusion:

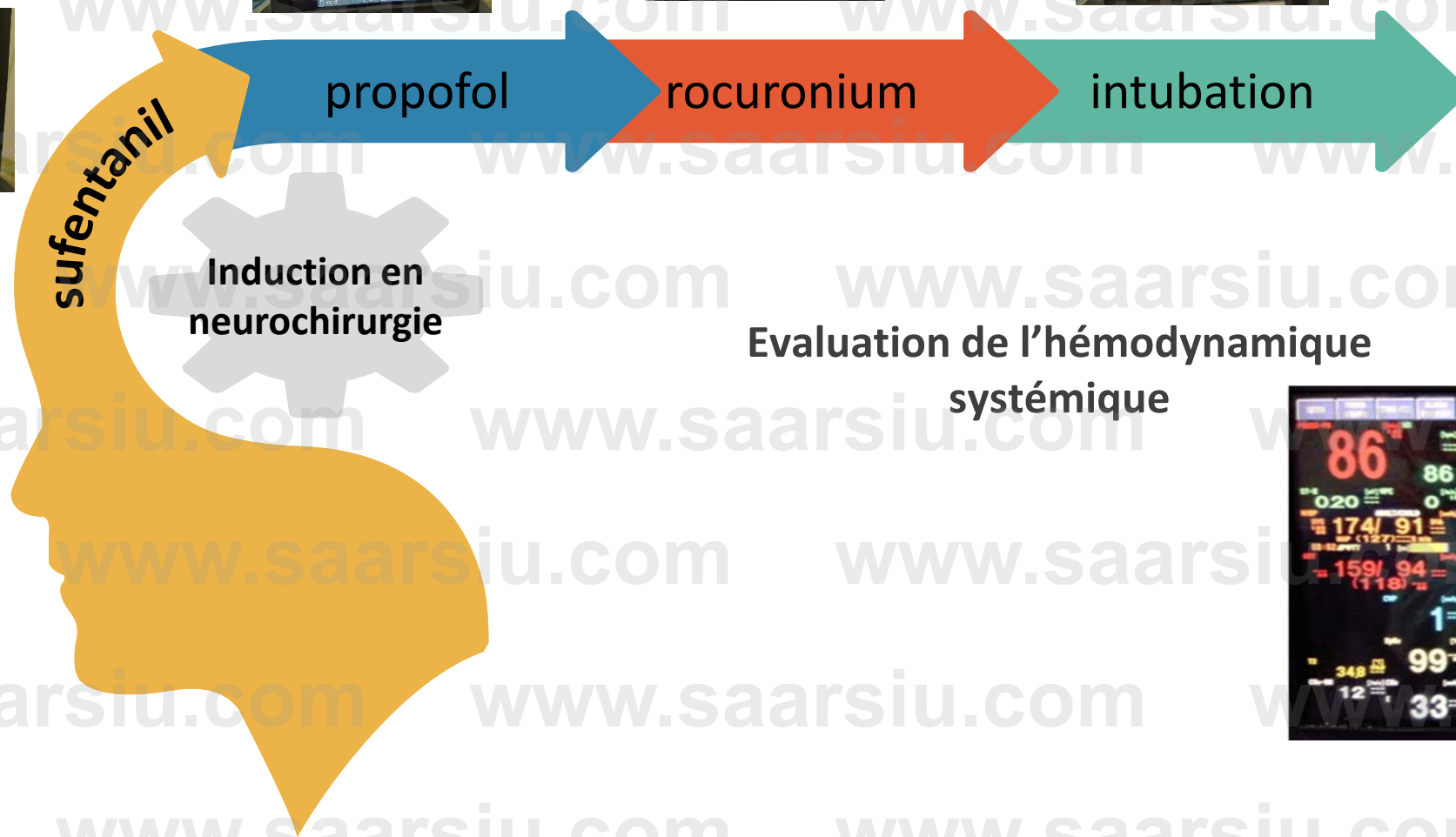
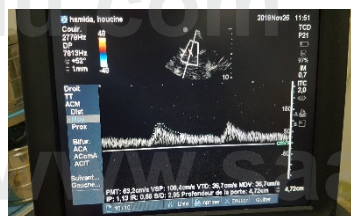
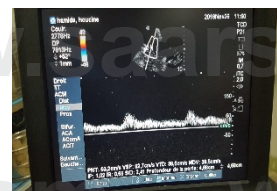
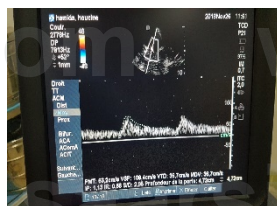
bradycardie

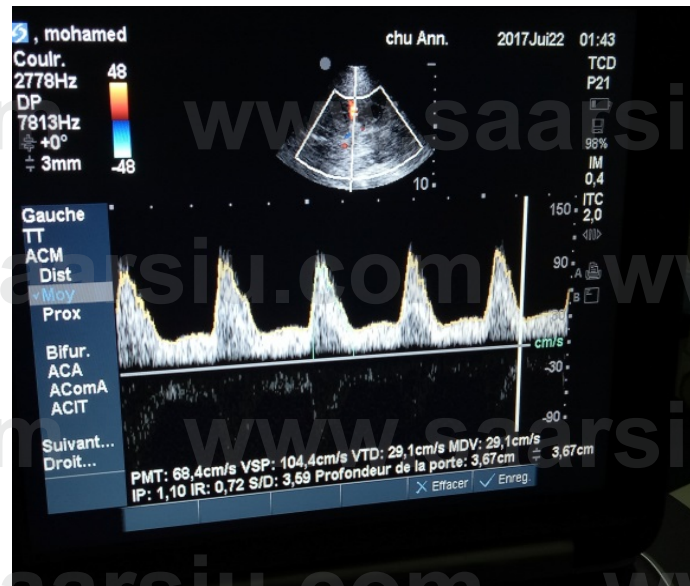
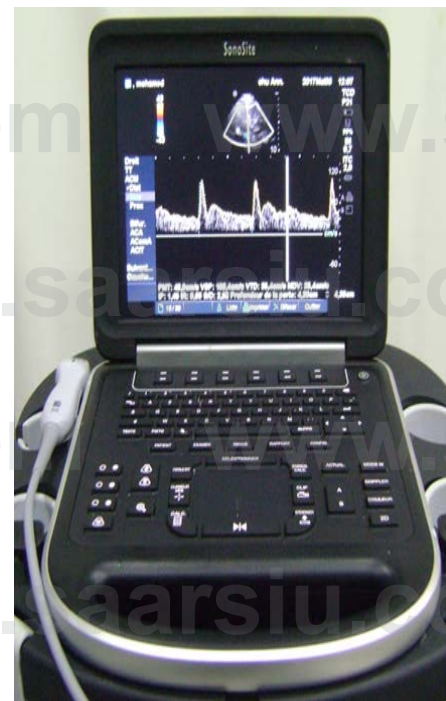
anémie

malades sous bbloquants



Evaluation de l'hémodynamique cérébrale par le DTC au ACM







RÉSULTATS





RESULTATS

Les Caractéristiques globales de la population

N :32

Age	50,18±14,12
Sexe ratio	1.69
Antécédents	
Diabète	2
HTA	4
Aucun	26
Type d'intervention	
Tumeur cérébrale	16
Tumeur de la fosse cérébrale postérieure	6
Hydrocéphalie chronique	2
Hernie discale	6
Compression médullaire	4
Hb avant l'intervention	13,10±1,16
FC	85,44 ± 15,43



RESULTATS

Les Caractéristiques de la réalisation du DTC

N :32

Fenêtre utilisée

Fenêtre temporale

Coté sondé

Coté de la tumeur

Artère cérébrale sondée

ACM

Profondeur

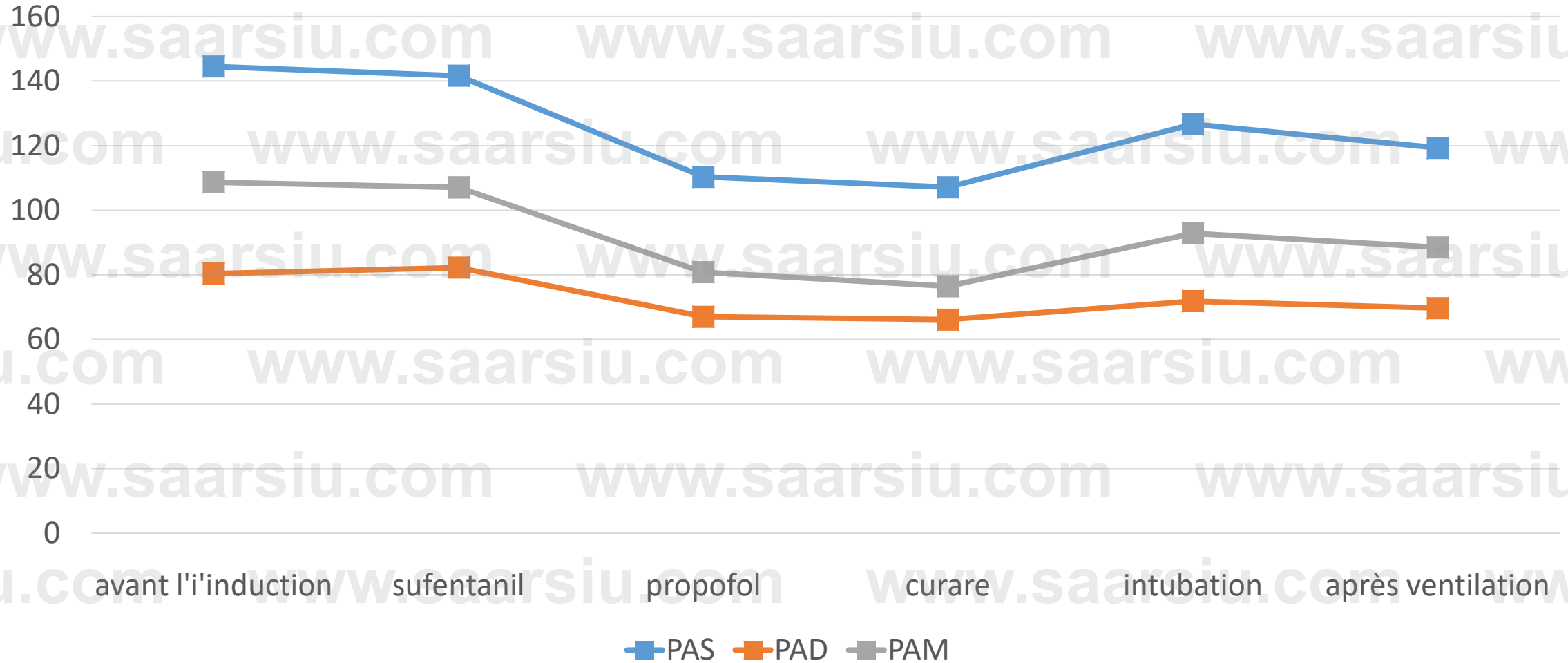
$4,85 \pm 0,75$

FC

$85,44 \pm 15,43$



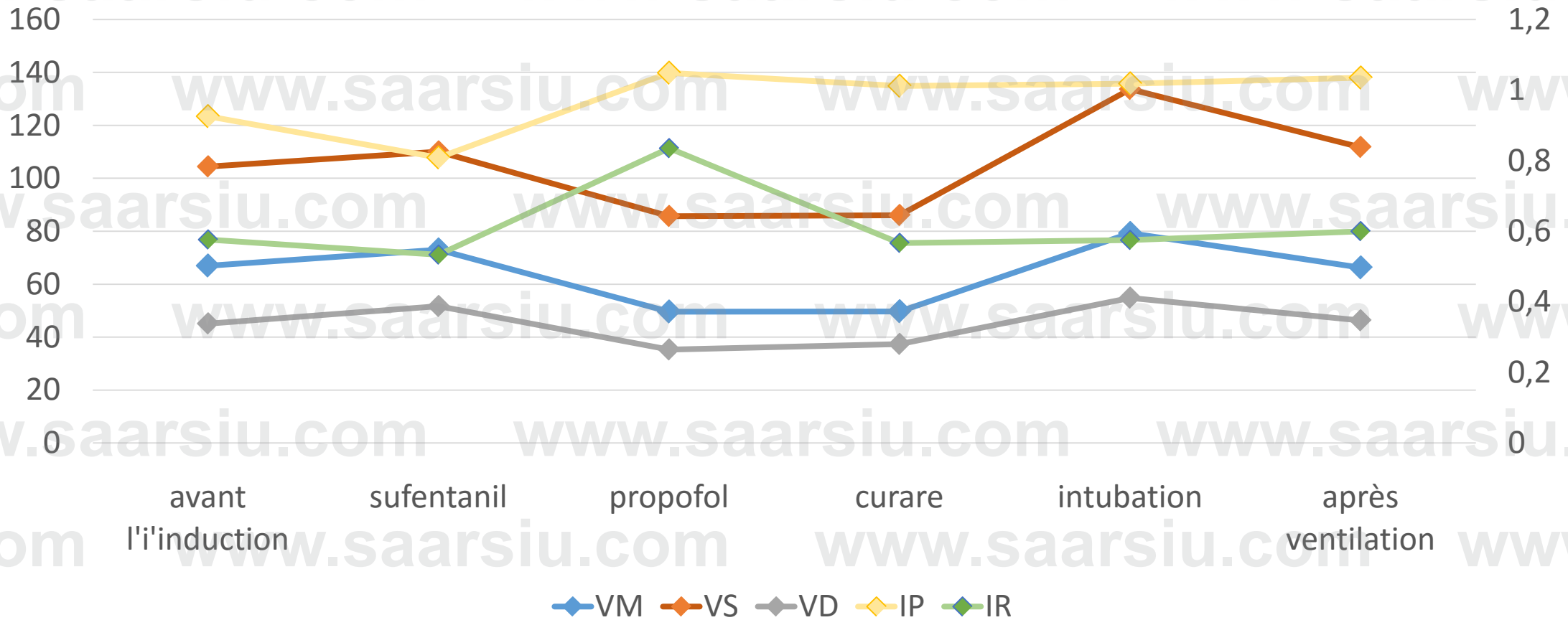
RESULTATS



Les modifications hémodynamiques en fonction des différentes étapes de l'induction



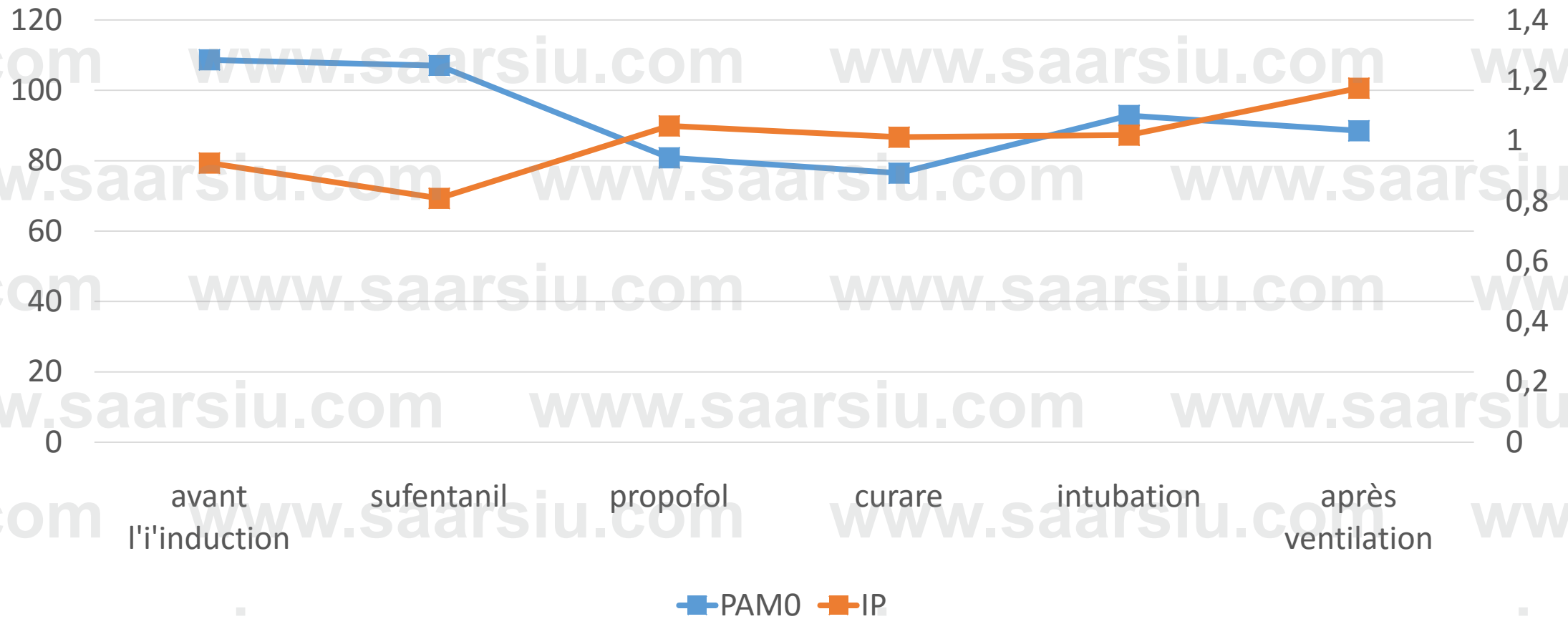
RESULTATS



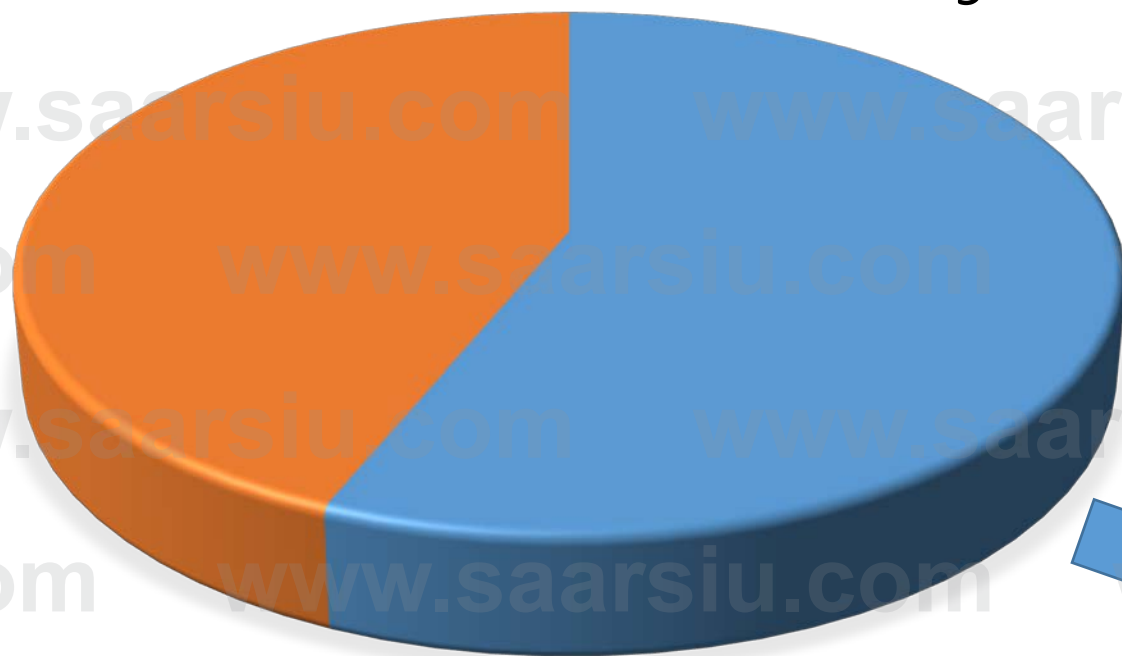
Les modifications éléments du doppler transcrânien en fonction des différentes étapes de l'induction



RESULTATS



Les modifications de l'IP et PAM en fonction des différentes étapes de l'induction



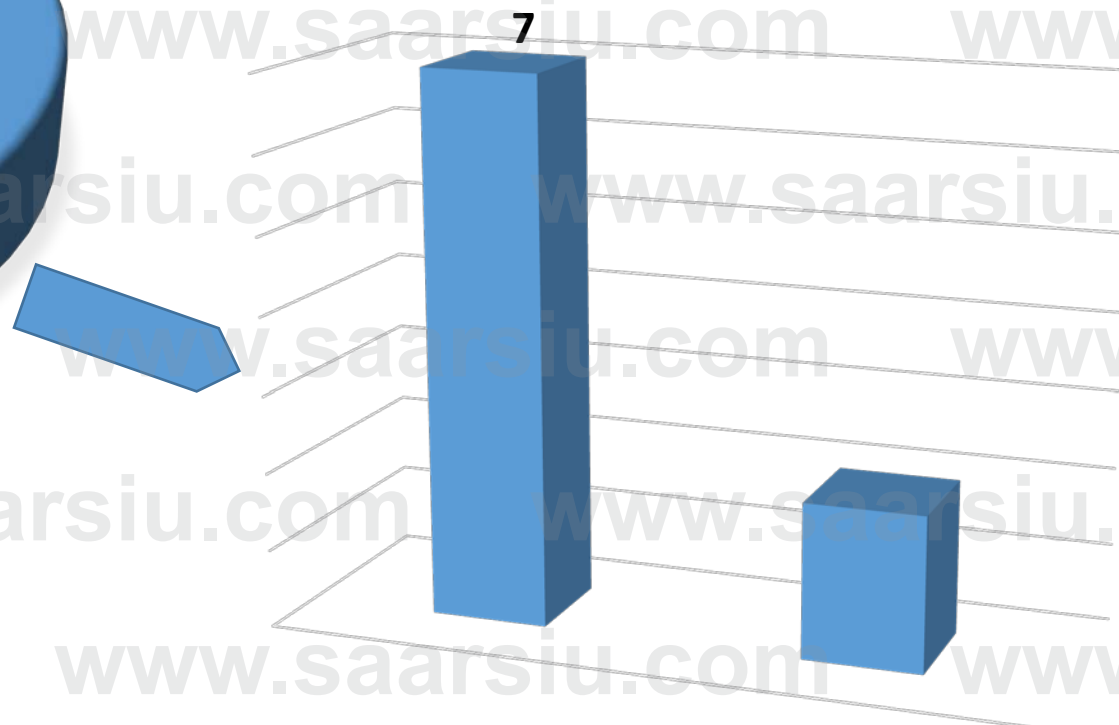
TC avec effet de masse

9



TC sans effet de masse

7



IP pathologique

IP non pathologique



Evolution de l'index de pulsatilité après induction chez les tumeurs cérébrales avec effet de masse au scanner



DISCUSSION





DISCUSSION

Notre étude : une diminution des vitesses au doppler après l'induction puis qui augmentent après l'intubation puis retour à la valeur de base avant l'induction

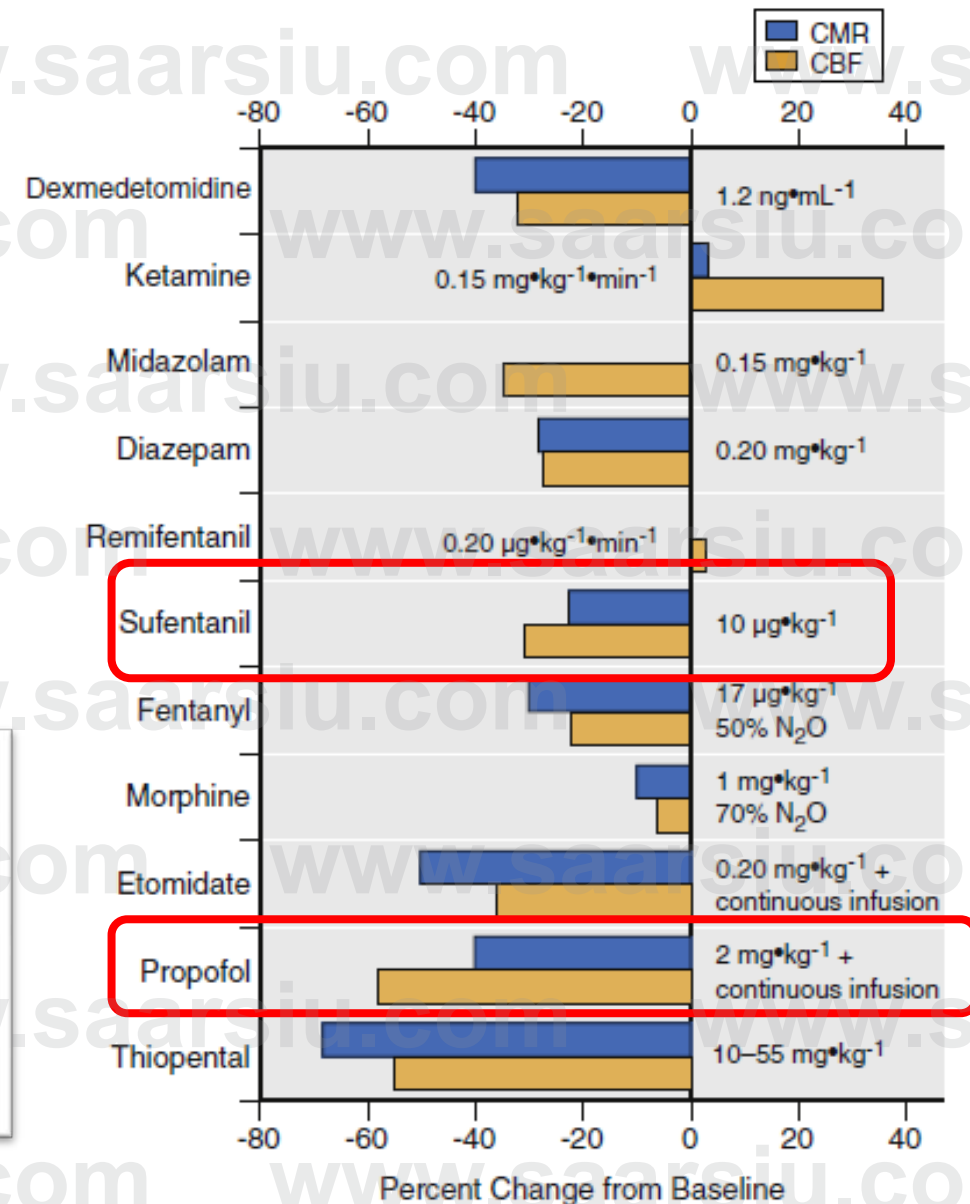
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doi: 10.1111/j.1399-6576.2007.01355.x

Review Article

Transcranial Doppler and anesthetics

V. FODALE, D. SCHIFILLITI, A. CONTI, T. LUCANTO, G. PINO and L. B. SANTAMARIA
Department of Neuroscience, Psychiatric and Anesthesiological Sciences, University of Messina, Messina, Italy



Takefumi Sakabe, 2016. Elsevier



DISCUSSION

British Journal of Anaesthesia 97 (3): 333–9 (2006)
doi:10.1093/bja/ael169 Advance Access publication July 7, 2006

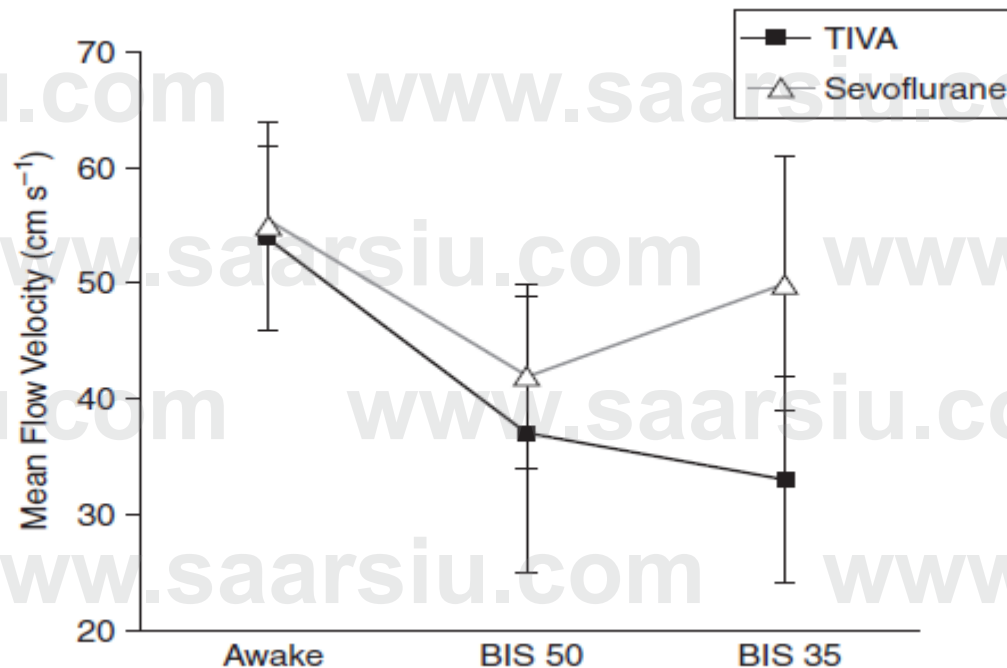
BJA

NEUROSCIENCES AND NEUROANAESTHESIA

Cerebral haemodynamic changes during propofol–remifentanyl or sevoflurane anaesthesia: transcranial Doppler study under bispectral index monitoring

A. Conti, D. G. Iacopino, V. Fodale*, S. Micalizzi, O. Penna and L. B. Santamaria

40 patients



Les patients avec déviation de ligne médiane / la PIC et PPC sont moins affectés qu'avec le Sevoflurane. Mais la présence d'une hypotension induite par le propofol change les données

Effet neuro-protecteur du propofol



DISCUSSION

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Review Article

Transcranial Doppler and anesthetics

V. FODALE, D. SCHIFILLITI, A. CONTI, T. LUCANTO, G. PINO and L. B. SANTAMARIA
Department of Neuroscience, Psychiatric and Anesthesiological Sciences, University of Messina, Messina, Italy

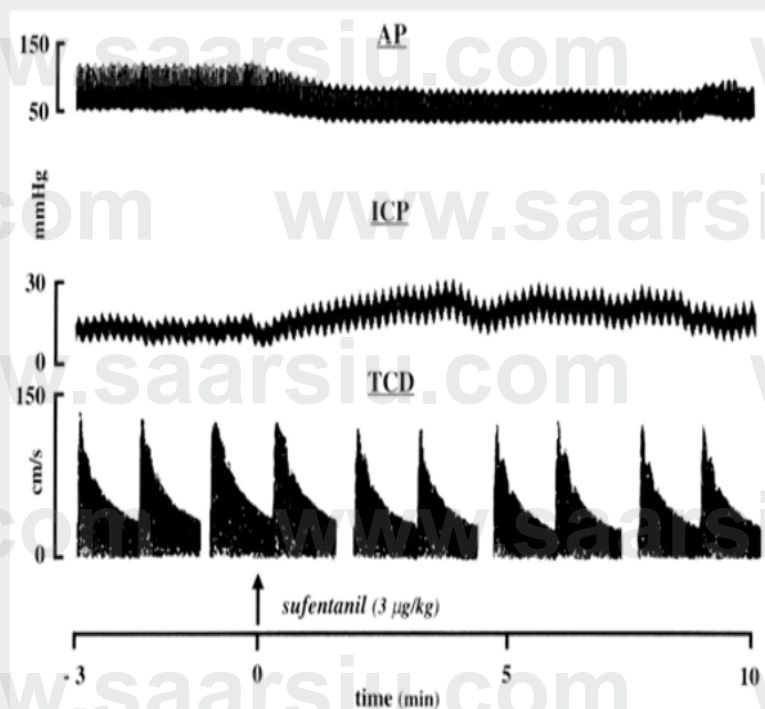


Sufentanil decreases cerebral flow velocity in a dose-related manner: at clinically relevant doses – in absence of other drugs – the infusion of this anesthetic agent is associated with a 27–30% reduction in the CBFV (75) while low sedative doses of sufentanil do not affect the CBFV (76).

Effects of Sufentanil on Cerebral Hemodynamics and Intracranial Pressure in Patients with Brain Injury

Christian Werner, M.D.,* Eberhard Kochs, M.D.,† Hanswerner Bause, M.D.,† William E. Hoffman, Ph.D.,‡
Inchen Schulte am Esch, M.D.§

Figure 2. Original tracings of arterial blood pressure (AP, mmHg), intracranial pressure (ICP, mmHg), and transcranial Doppler sonography flow velocity (cm/s) before and after sufentanil in one patient of group 2. Mean arterial blood pressure decreased from 95 to 72 mmHg, and ICP increased from 19 to 28 mmHg.



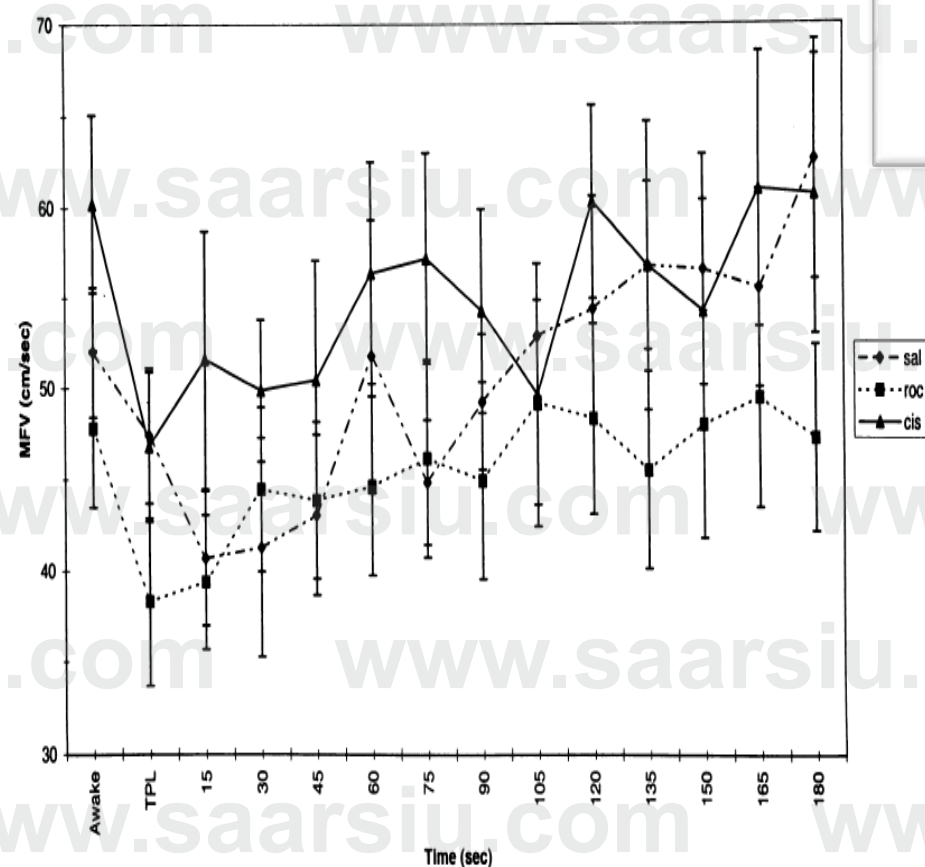
Conclusions: The current data show that sufentanil (3 µg/kg intravenous) has no significant effect on middle cerebral artery blood flow velocity and ICP in patients with brain injury, intracranial hypertension, and controlled MAP. However, transient increases in ICP without changes in middle cerebral artery blood flow velocity may occur concomitant with decreases in MAP. This suggests that increases in ICP seen with sufentanil may be due to autoregulatory decreases in cerebral vascular resistance secondary to systemic hypotension. (Key words: Analgesics opioid: Sufentanil. Measurement technique: cerebral blood flow velocity; intracranial pressure; transcranial Doppler sonography.)



DISCUSSION

Transcranial Doppler Ultrasonography With Induction of Anesthesia and Neuromuscular Blockade in Surgical Patients

W. Andrew Kofke, MD, FCCM,*
Natalie Shaheen, BA, † Julie McWhorter, BA, †
Elizabeth H. Siz, MD † Gerald Hobbs, PhD ‡



39 adultes ASA I et II

Main Results: No significant differences between the groups were present in the postanesthetic induction maximal or minimal mean flow velocity.

Conclusions: cis-Atracurium and rocuronium, administered after thiopental, do not produce clinically relevant changes in cerebral blood flow velocity. © 2001 by Elsevier Science Inc.



DISCUSSION

Ultrasound in Med. & Biol., Vol. 22, No. 9, pp. 1163–1168, 1996
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0301-5629/96 \$15.00 + .00



TRANSCRANIAL DOPPLER ULTRASONOGRAPHY IN NEUROSURGERY: EFFECTS OF INTRACRANIAL TUMOUR ON RIGHT MIDDLE CEREBRAL ARTERY FLOW VELOCITY DURING INDUCTION OF ANAESTHESIA

MAI-LI DONG,[†] W. ANDREW KOFKE,[‡] RAYMOND S. POLICARE,[‡] ANN S. WANG,*
JAMES ACHEE,[§] LALIGAM N. SEKHAR,^{||} and PETER J. IANNETTA[#]



CONCLUSION

The right mean MCAFV changes significantly over time with anaesthetic induction and intubation in neurosurgical patients. Endotracheal intubation under anaesthesia not only caused a temporary increase in MCAFV but may also have caused a decrease in cerebral vascular resistance, as indicated by a decreased PI. Right-sided tumour patients had overall greater right MCAFV when compared with non-tumour patients.



LIMITE DE L'ÉTUDE

- La taille de l'échantillon
- Réalisation du protocole de l'étude



CONCLUSION



Sans monitoring



Prise en charge Mal guidé

DES PENSÉES EN OR

**UN CERVEAU EN
OR**



UNE VIE EN OR

Maxime Gilbert



DISCUSSION

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Review Article

Transcranial Doppler and anesthetics

V. FODALE, D. SCHIFILLITI, A. CONTI, T. LUCANTO, G. PINO and L. B. SANTAMARIA
Department of Neuroscience, Psychiatric and Anesthesiological Sciences, University of Messina, Messina, Italy



Jansen et al. found that in patients undergoing brain tumor surgery there was a significantly lower jugular saturation in patients anesthetized with propofol than in a matched group anesthetized with nitrous oxide and isoflurane[46];

Nandate et al. found a significant decrease in jugular bulb saturation 1 h after normothermic cardiopulmonary bypass with propofol anesthesia but not with isoflurane or Sevoflurane anesthesia. According to this view, the lowflow state induced by propofol may ameliorate the pressure-flow relationship, but worsen the flow metabolism ratio, thus creating a disautoregulation instead of a hyperregulatory state[47].