26371 - USE OF INDUCED HYPOTENSION IN PATIENTS UNDERGOING TREATMENT FOR BRAIN ARTERIOVENOUS MALFORMATIONS

Suwimon Tangwiwat FRCAT MD, Pirjo Manninen, FRCPC MD; Karolinah Lukitto, MD; Toronto Western Hospital, University Health Network, Toronto, ONTARIO, Canada

INTRODUCTION: Aggressive blood pressure management may be effective in reducing the incidence of intra- and post-procedure hemorrhage during treatment of brain arteriovenous malformation (AVM). The purpose of this study was to assess and compare the management of blood pressure during the intra- and post-procedure and the incidence of post-procedure complications in patients undergoing endovascular (group E) and craniotomy (C) treatment of AVM.

METHODS: With IRB approval, 41 patients undergoing treatment (E or C) of a brain AVM were prospectively followed. Demographic data, management of blood pressure including use of induced hypotension both intra- and post-procedure and all intra- and post-procedure complications were documented. Statistic analysis was with t-test and chi-square test. $P < 0.05$ was considered significant.

RESULTS: Overall, 56 procedures were recorded (E, $n=34$; C, $n=22$). A preoperative embolization was performed in 9 patients. All procedures were performed with general anesthesia. Mean age ($\pm$ SD) was 36 ± 14 vs 36 ± 14 yr; weight 77 ± 21 vs 70 ± 14 kg; preop.GCS 15 ± 0.7 vs 15 ± 0.2 , for E and C respectively. Reasons for presentation of AVM were hemorrhage (32% vs 31%) and seizure (24% vs 45%). Blood pressure results are in table. Intra-operative blood pressure of C was lower than E. Post-procedure induced hypotension was used in 79% of surgical cases for average 1.75 ± 0.7 days. Only 1 patient (C) had a large intra-procedure blood loss (1.5 L) without induced hypotension. There were no post-procedure hemorrhages within 48 hr. Post-procedure complications in total were 29% (E) and 45% (C) and included; new focal neuro deficit (E vs C) (18% vs 17%), visual disturbance (18% vs 9%), brain edema and pneumocephalus (1 patient in C) and epidural hematoma (same patient in C and E) occurred included. Outcome at discharge was good in 97% vs 90% (E vs C) patients.

Group(N)	SBP/DBP(MAP) (mmHg) Mean $\pm$ SD			Induced Hypotension
procedureN (%)	Baseline	Pre-induction	Intra-procedure	Post-procedure at 24h
Endovascular (34)	120/76(90) $\pm$ 12/8(8)	107/60(75) $\pm$ 9/11(9)	97/55(69) $\pm$ 8/7(6)	
	120/68(69) $\pm$ 13/9(34)	7 (21%)		
Craniotomy (22)	110/70(76) $\pm$ 30/20(33)	106/60(75) $\pm$ 10/8(8)	90/50(64) $\pm$ 7/9(6) *	
	116/63(81) $\pm$ 12/10(9)	16 (73%)*		

= P value < 0.05

CONCLUSION: To facilitate surgical hemostasis or embolization material placement, induced hypotension is used during AVM treatment, though more frequently during surgery. Post-procedure hypotension was only used in the surgical patients. We were unable to assess the relationship of blood pressure to hemorrhage in this small group of patients.

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1, P.; Lukitto,K.

, Toronto Western Hospital, University Heal

) Bathurst Street, Toronto, Ontario Canada

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