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Original Article

Assessment of Recovery Profile after Subarachnoid Block in Elderly versus Young Adult Patients

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ABSTRACT:

Background: The present study was undertaken for assessing the recovery profile after Subarachnoid Block in Elderly versus Young Adult Patients. **Materials & methods:** 20 patients were randomized into two study groups as follows: Group 1: 10 Elderly Patients undergoing Subarachnoid Block, and Group 2: 10 Young Patients undergoing Subarachnoid Block. All patients were preoperatively evaluated for fitness of anaesthesia. All the patients underwent Subarachnoid Block for different surgical procedures. Recovery profile was assessed in all the patients. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. **Results:** In the group 1, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 83.1, 90.5, 84.5, 86.5, 88.4 and 86.8 respectively. In the group 2, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 83.8, 89.7, 95.4, 90.9, 92.1 and 84.1 respectively. In the present study, significant results were obtained while comparing the mean pulse rate at postoperative 5 minutes, postoperative 30 minutes and postoperative 60 minutes**. Conclusion:** Recovery profile is slower and more deranged among elderly patients.

Key words: Elderly, Young, Subarachnoid

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INTRODUCTION

The immediate risk of anesthesia used to be considered to be quite high. Intraoperative mortality was a significant issue that required substantial effort to address. Avoiding intraoperative catastrophe was the primary mission of the anesthesiologist. Fortunately, through the efforts of our national organizations dedicated to patient safety and quality improvement, the incidence of intraoperative mortality has decreased significantly.[1-3]

One could argue as to whether this is due to improved monitoring, better drugs, improved delivery devices or professional aptitude. Whatever the cause, immediate perioperative mortality is reported to have been reduced to 1 death per 10,000 over about 50 years.[4, 5] Beyond the obvious benefit to the patient, this state has provided an opportunity for anesthesiologists to examine outcomes over a longer period of time. While the Joint Commission for the Accreditation of Health Care Organizations continues to require documented follow-up of anesthetized patients up to 48 hours following a procedure, outcomes researchers have reached far beyond this time frame to search for perioperative outcomes months to years following a procedure. Elderly patients have higher risk of morbidity and mortality in the perioperative period and therefore are in the position to benefit the most from improvements in perioperative care.[1-3]

Even healthy elderly patients continue to have a relatively higher incidence of mortality and morbidity. The reason for this phenomenon has not been elucidated and is the subject of significant scientific and social interest. In particular, long term outcomes represent an area of interest to the geriatric anesthesiologist. In the middle of the previous century, advanced age (over 55) was considered a contraindication to surgery and anesthesia. Today, operations are routinely performed on centenarians.[4-7]

Hence; the present study was undertaken for assessing

the recovery profile after Subarachnoid Block in Elderly versus Young Adult Patients.

MATERIALS & METHODS

The present study was undertaken for assessing the recovery profile after Subarachnoid Block in Elderly versus Young Adult Patients. A total of 20 subjects were enrolled in the present study. All the subjects were randomized into two study groups as follows: Group 1: 10 Elderly Patients undergoing Subarachnoid Block (age group of more than 50 years), and Group 2: 25 Young Patients undergoing Subarachnoid Block (age group of less than 30 years). All patients were preoperatively evaluated for fitness of anaesthesia. All the patients underwent Subarachnoid Block for different surgical procedures. Recovery profile was assessed in all the patients. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

Majority of the patients of both the study groups were males. Mean age of the patients of group 1 was 26.8 years while mean age of the patients of group 2 was 61.5 years. Mean duration of operation among patients of group 1 and group 2 was 82.1 minutes and 84.6 minutes respectively. In the group 1, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 83.1, 90.5, 84.5, 86.5, 88.4 and 86.8 respectively. In the group 2, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 83.8, 89.7, 95.4, 90.9, 92.1 and 84.1 respectively. In the present study, significant results were obtained while comparing the mean pulse rate at postoperative 5 minutes, postoperative 30 minutes and postoperative 60 minutes.

Table 1: Mean duration of operation

Duration of operation	Group 1	Group 2
Mean	82.1	84.6
SD	16.9	15.8
p- value	0.85	

Table 2: Incidence of intraoperative hypotension

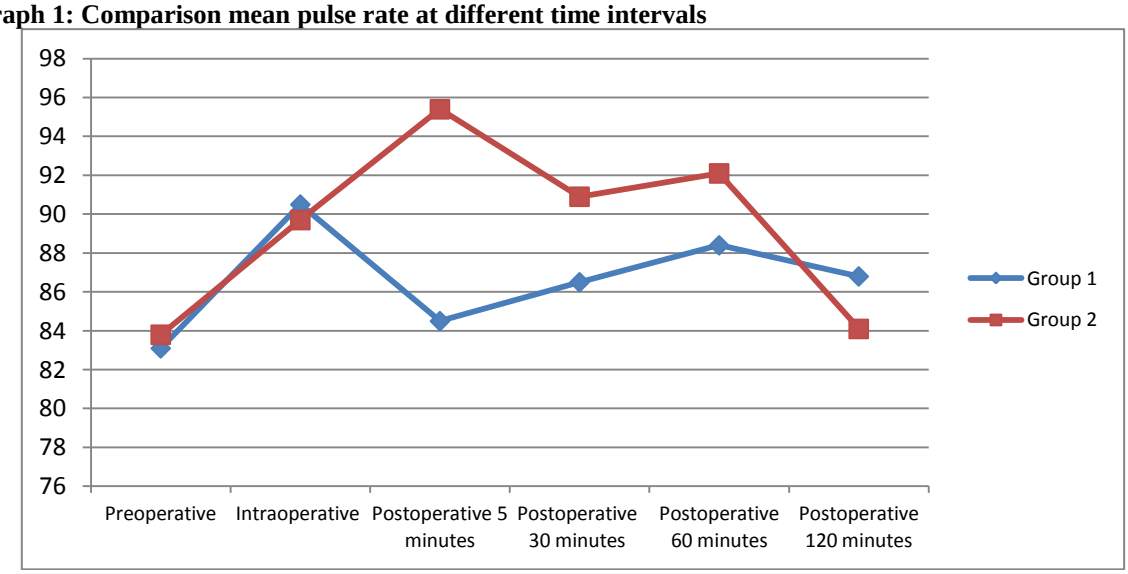
Incidence	Group 1		Group 2	
	n	%	n	%
Intraoperative hypotension	1	10	2	20

Table 3: Comparison mean pulse rate at different time intervals

Mean pulse rate	Group 1	Group 2	p- value
Preoperative	83.1	83.8	0.11
Intraoperative	90.5	89.7	0.28
Postoperative 5 minutes	84.5	95.4	0.00*
Postoperative 30 minutes	86.5	90.9	0.00*
Postoperative 60 minutes	88.4	92.1	0.00*
Postoperative 120 minutes	86.8	84.1	0.98

*: Significant

Graph 1: Comparison mean pulse rate at different time intervals



DISCUSSION

The elderly patients appear to be at greater risk of anaesthesia and surgery because of two factors; an increase in prevalence of concomitant (age related) disease and a basic decline in organ function independent of disease. Returning the patient quickly to their usual environment and functional status is recommended to reduce complications that are often associated with medications and immobilisation in hospital. The number of elderly person undergoing surgery in India is increasing owing to increase in life expectancy, but because of concomitant age related disease and basic decline in organ function they are at greater risk during anaesthesia and surgery.[6- 9] Hence; the present study was undertaken for assessing the recovery profile after Subarachnoid Block in Elderly versus Young Adult Patients.

Majority of the patients of both the study groups were males. Mean age of the patients of group 1 was 26.8 years while mean age of the patients of group 2 was 61.5 years. Mean duration of operation among patients of group 1 and group 2 was 82.1 minutes and 84.6 minutes respectively. In the group 1, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 83.1, 90.5, 84.5, 86.5, 88.4 and 86.8 respectively. In the group 2, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 83.8, 89.7, 95.4, 90.9, 92.1 and 84.1 respectively. Zaidi MN et al compared recovery profile of elderly patients as compared to young population. Twenty one elderly patients (>65 yrs) having intertrochanteric fracture posted for open surgery were compared with similar number of young patients (20-40 yrs). Both the groups were operated under spinal anaesthesia with 2.5 ml of 0.5% hyperbaric bupivacaine in L3-4 inter-space. Orthostatic challenge was given at 0, 30, 60 and 90 min in recovery room (RR) and variation in pulse rate & MAP was compared. Highest sensory level achieved was similar in both study groups but vasopressor requirement was more in elderly for maintaining haemodynamic stability. Sensory level was slow to regress in elderly patients. Despite having greater MAP fall in the elderly patients it was never more than 10% at any point of time till 90 min in RR. Shivering was common postoperative complica-tion in elderly patients. It was concluded that new discharge criteria could be safely applied to elderly patients and can lead to significant time saving in recovery room.[6] Lawrence et al. described the impact of surgery on functional outcomes in 372 elderly patients undergoing abdominal surgery. The participants were assessed preoperatively and postoperatively at 1, 3, and 6 weeks, 3 and 6 months, and they concluded that the functional recovery for patients over 60 takes 3 to 6 months or longer.[11]

In the present study, significant results were obtained while comparing the mean pulse rate at postoperative 5 minutes, postoperative 30 minutes and postoperative 60 minutes**.** Critchley LAH et al studied the haemodynamic effects of subarachnoid block in elderly patients. Thirty patients were undergoing elective transurethral surgery and 18 non-elective orthopaedic surgery, predominantly fractured neck of femur. Systolic arterial pressure (SAP) was measured by automated oscillotonometry, central venous pressure (CVP) by manometer and cardiac index (Cl), stroke index (SI) and heart rate (HR) by transthoracic electrical bioimpedance. Systemic vascular resistance index (SVRI) was derived. SAP decreased by more than 25% in 33 patients and SVRI showed similar decreases. CVP decreased in all patients. Cl was unaffected because a decrease in SI in some patients was compensated for by an increase in HR. Decreases in SAP of 25% were treated initially with colloid solution 8 ml kg^{-1} , which restored SAP in 19 patients. CVP, SI and HR were all restored to baseline values, however, SVRI was decreased further. Fourteen patients required additional treatment with metaraminol which restored SVRI to baseline values. Patients with systolic hypertension were more likely to require treatment with metaraminol.[12]

CONCLUSION

Recovery profile is slower and more deranged among elderly patients.

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