

## ORIGINAL ARTICLE

### Recovery Profile after Subarachnoid Block in Elderly versus Young Adult Patients

Dr Pooja Gulati

Assistant professor, Department of Anesthesiology Era's Lucknow Medical College and Hospital Lucknow Uttar Pradesh

#### ABSTRACT:

**Background:** The present study was undertaken for assessing the recovery profile after Subarachnoid Block in Elderly versus Young Adult Patients. **Materials & methods:** A total of 50 subjects were enrolled in the present study. All the subjects were randomized into two study groups as follows: Group A: 25 Elderly Patients undergoing Subarachnoid Block, and Group B: 25 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 A, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 82.6, 89.6, 83.6, 85.6, 84.3 and 85.4 respectively. In the group B, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 84.2, 88.4, 94.6, 91.5, 90.5 and 86.1 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:** Subarachnoid block, Recovery

**Corresponding Author:** Dr Pooja Gulati, Assistant professor Department of Anesthesiology Era's Lucknow Medical College and Hospital Lucknow Uttar Pradesh

**This article may be cited as:** Gulati P. Recovery Profile after Subarachnoid Block in Elderly versus Young Adult Patients. J Adv Med Dent Scie Res 2017;5(5):-106-108.

#### INTRODUCTION

The number of elderly person undergoing surgery in India is increasing owing to increase in life expectancy and recent advances in surgical and anaesthetic techniques. Currently about one quarter of all operations are performed on persons 65 years and above and is expected to beg large share of institutional health care resources in future. 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.<sup>1-3</sup>

The spinal anaesthesia has the potential for being a uniquely safe anaesthesia technique due to combination of profound analgesia, muscle relaxation and less systemic and metabolic disturbances compare to general anaesthesia. But despite of this advantages anaesthesiologist continue to face confusion about balancing risk and benefits of spinal anaesthesia. 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.<sup>4-6</sup> Surgical procedures previously considered too lengthy for the ambulatory surgery setting are now being performed during spinal anaesthesia. The complete recovery profile of tetracaine and bupivacaine are now of interest but are not available in the literature.<sup>5-7</sup> 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 50 subjects were enrolled in the present study. All the subjects were randomized into two study groups as follows:

Group A: 25 Elderly Patients undergoing Subarachnoid Block (age group of more than 50 years), and

Group B: 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 A was 28.6 years while mean age of the patients of group B was 58.5 years. In the group A, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 82.6, 89.6, 83.6, 85.6, 84.3 and 85.4 respectively. In the group B, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 84.2, 88.4, 94.6, 91.5, 90.5 and 86.1 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 A	Group B
Mean	76.2	79.5
SD	11.9	12.4
p- value	0.23	

**Table 2:** Incidence of intraoperative hypotension

Incidence	Group A		Group B	
	n	%	n	%
Intraoperative hypotension	3	12	5	20

**Table 3:** Comparison mean pulse rate at different time intervals

Mean pulse rate	Group A	Group B	p-value
Preoperative	82.6	84.2	0.42
Intraoperative	89.6	88.4	0.36
Postoperative 5 minutes	83.6	94.6	0.00*
Postoperative 30 minutes	85.6	91.5	0.01*
Postoperative 60 minutes	84.3	90.5	0.02*
Postoperative 120 minutes	85.4	86.1	0.85

\*: Significant

## DISCUSSION

The empirical discharge criteria from recovery room (RR) include regression of sensory level to two dermatomes or up to T10 and return of motor function to lower extremity (assessed by toe movement) before shifting the patients to less closely monitored surgical wards. Unfortunately this practice leads to inordinate delays thereby utilizing already meagre recovery

room services and increasing cost. New discharge criteria are being routinely investigated to decrease RR time without jeopardising patient safety. These are based on checking return of autonomic function by subjecting the patients to orthostatic BP changes in RR. It has already been proven that there is no correlation between orthostatic decrease in MAP and the concurrent level of sensory anaesthesia. Also it is safe from haemodynamic point of view to discharge patients from recovery room after they meet orthostatic criteria even if the level of sensory anaesthesia is above T10 and motor function has not returned to the toes.<sup>7-9</sup> Hence; the present study was undertaken for assessing the recovery profile after Subarachnoid Block in Elderly versus Young Adult Patients.

In the group A, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 82.6, 89.6, 83.6, 85.6, 84.3 and 85.4 respectively. In the group B, Mean pulse rate at Preoperative time, Intraoperative time, Postoperative 5 minutes, Postoperative 30 minutes, Postoperative 60 minutes and Postoperative 120 minutes was 84.2, 88.4, 94.6, 91.5, 90.5 and 86.1 respectively. Sirsat V et al assessed the recovery Profile after Subarachnoid Block in Elderly Versus Young Adult Patients. 100 patients ASA grade I - II of either sex were divided into 2 equal groups of 50 each pout which Group I were young adults (20-40 years age) and Group II were elderly patients above 60 years age. All patients were preoperatively evaluated for fitness of anaesthesia. In group I mean age was  $32.42 \pm 3.44$  and in group II mean age was  $66.40 \pm 3.91$  years. After intravenous access, preloading was done with 7 ml / kg Ringer lactate solution. The mean duration of operation in group I was  $77.6 \pm 14.6$  mints and in group II was  $81.0 \pm 14.6$  mints, there was no statistical significant difference. Mean preoperative pulse rate in group I was  $87.12 \pm 7.17$  per min and  $84.92 \pm 14.6$  min in group II patients. At all time intervals percentage rise in mean pulse rate and percent fall in MAP was more significant in elderly (group II) patients at all time intervals as compared to group I patients and it was more significant at 0 and 30 minutes and even upto 90 minutes in elderly patients. The sensory level was higher and regression was slower in elderly patients as compared to adult patients.<sup>9</sup>

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. 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 complication 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.<sup>10</sup>

## CONCLUSION

Recovery profile is slower and more deranged among elderly patients.

## REFERENCES

1. Zaidi MN, Bano S, Ahmed M: Aprospective study of recovery profile after subarachnoid block in elderly versus young patients. *Indian Journal of Anaesthesia* 2008; 52(1):58-62.
2. Critchley LA. Hypotension, subarachnoid block and the elderly patient *Anaesthesia* 1996; 51, 1139-43.
3. Murray D, Dodds C. Perioperative care of elderly. *Contin Educ Anaesth Crit Care Pain* 2004; 4: 193-196.
4. Pitkanen M, Haapaniemi L, Tuominen M, et al. Influence of age on spinal anesthesia with isobaric 0.5% bupivacaine. *Br J Anaesth* 1984; 56: 279-84.
5. Veering BT, Burm AGL, Vletter AA, Van den Heuvel RAM, Spierdijk J 1991. The effect of age on the systemic absorption and systemic disposition of bupivacaine after subarachnoid administration. *Anesthesiology* 1991;74: 250-57.
6. Veering BT. Regional anaesthesia in elderly patient. In: Wildsmith JAW, Armitage EN, McClure JH, editors. *Principles and practice of regional anaesthesia*. Edinburgh: Churchill Livingstone; 2003; 323-32.
7. Alexander CM, Teller LE, Gross JB, Owen D, Cunningham C, Laurenciof: New discharge criteria decrease recovery room time after subarachnoid block. *Anesthesiology* 1989; 70:640-43.
8. Knoerl DV, McNully P, Estes C, Conelk: Evaluation of orthostatic blood pressure testing as discharge criterion from PACU after spinal anaesthesia. *J. PerianaesthesiaNurs* 2001;16; 11-18.
9. Sirsat V, Deshpande S. Recovery Profile after Subarachnoid Block in Elderly Versus Young Adult Patients. *Indian Journal of Anesthesia and Analgesia*. 2016; 3(2): 143- 149.
10. Zaidi MN, Bano S, Ahmed M. A Prospective Study of Recovery Profile After Subarachnoid Block in Elderly Versus Young Patients. *Indian Journal of Anaesthesia*. 2008; 52(1): 58.