

The Efficacy of Balanced Anesthesia Vs General Anesthesia for Upper Abdominal Surgery

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Abstract

Original Research Article

Background: Balance anesthesia as an alternative to general anesthesia because it is a less expensive, simpler procedure that is beneficial to our developing countries. **Objective:** To evaluate the efficacy of balanced anesthesia vs general anesthesia for upper abdominal surgery. **Method:** This comparative study was carried out at tertiary medical hospital from June 2021 to June 2022. Where After obtaining written informed consent, a total 200 patients of ASA grading I & II selected for abdominal surgery randomly. These patients are divided two groups either by balanced anesthesia, n=100 or by general anesthesia, n=100. The patients were visited on the day before surgery for pre anesthetic check up. **Results:** During the study, majority were belonging to 41-50 years age group, 65%. In balanced anesthesia, ASA grading I and II both case 50% were noted followed by total anesthesia duration was 50 minutes – 110 Minutes, operation time was 40 minutes – 100 minutes, 6-10 days was hospital duration. Whereas in general anesthesia group, ASA grading I was 75% and 25% II were noted followed by total anesthesia duration was 60 minutes – 130 Minutes, operation time was 50 minutes – 130 minutes, 8-12 days was hospital duration. In balanced anesthesia was less and delayed than general anesthesia. Respiratory pattern and consciousness not satisfactory 10% patient of general anesthesia. **Conclusion:** According to the findings of this study, patients' consciousness and pain management capacity are better in patients undergoing upper abdominal procedures under balanced anesthesia than in patients undergoing general anesthesia in the post-operative manner.

Keywords: Balanced anesthesia, general anesthesia, abdominal surgery.

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INTRODUCTION

The notion of balanced anesthesia dates back to 1910, when George W. Crile presented his anociassociation hypothesis. Crile taught that mild general anesthesia might avoid mental impulses during procedures, whereas local analgesia/regional anesthesia may block painful stimuli (Spinal anaesthesia) [1-3]. Lundyin coined the phrase "balanced anesthesia," implying that a balance of agents and procedures (e.g., premedication, regional anesthesia, and general anesthesia using one or more intravenous anesthetic agents) be employed to achieve the various components of general anesthesia [4-6]. Previously, the sole anesthetic option for upper abdominal surgery was general anesthesia. We now use balance anesthesia as an alternative to general anesthesia because it is a less expensive, simpler procedure that is beneficial to our

developing countries. It is also applicable in peripheral clinics where an anesthesia machine with gasses such as nitrous oxide, oxygen, and halothene is not available [7].

In this study our main goal is to evaluate the efficacy of balanced anesthesia vs general anesthesia for upper abdominal surgery.

OBJECTIVE

To evaluate the efficacy of balanced anesthesia vs general anesthesia for upper abdominal surgery.

METHOD

This comparative study was carried out at tertiary medical hospital from June 2021 to June 2022. After obtaining written informed consent, a total 200 patients of ASA grading I & II selected for abdominal surgery randomly. These patients are divided two

groups either by balanced anesthesia, n=100 or by general anesthesia, n=100. The patients were visited on the day before surgery for pre anesthetic check up.

RESULTS

In table-1 shows age distribution of the study group where majority were belonging to 41-50 years age group, 65%. Followed by 25% belong to 30-40 years group and 10% belong to >51 years age group. The following table is given below in detail:

Table-1: Age distribution of the patients

Age group	%
30-40 years	25%
41-50 years	65%
>51 years	10%

In figure-1 shows gender distribution where 60% were female and 40% were male. The following figure is given below in detail:

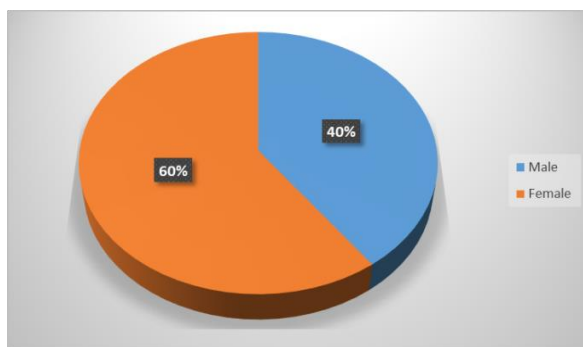


Figure-1: Gender Distribution of the study group

In table-3 shows operative status of the study group where in balanced anesthesia, ASA grading I and II both case 50% were noted followed by total anesthesia duration was 50 minutes – 110.

general anesthesia group, ASA grading I was 75% and 25% II were noted followed by total anesthesia duration was 60 minutes – 130 Minutes, operation time was 50 minutes – 130 minutes, 8-12 days was hospital duration. The following table is given below in detail:

Minutes, operation time was 40 minutes – 100 minutes, 6-10 days was hospital duration. Whereas in

Table-2: operating status

Operating status	Balanced Anesthesia, %	General Anesthesia, %
ASA grading		
I	50%	75%
II	50%	25%
Total anesthesia duration	50 minutes – 110 minutes	60 minutes – 130 minutes
Operation time	40 minutes – 100 minutes	50 minutes – 110 minutes
Hospital stay	6-10 days	8-12 days

In table-3 shows types of Operations performed of patients undergoing Balanced Anesthesia and General anesthesia in upper abdominal surgery

where more or less all upper abdominal surgery can be done by balanced anesthesia as well as general anesthesia. The following table is given below in detail:

Table-3: Types of operation

Types of operation	Balanced anesthesia, %	General anesthesia, %
Cholecystectomy	20%	22%
Cholicholithotomy	14%	11%
Nephrolithotomy	12%	13%
Pyelolithotomy	8%	9%
Gastrojejunostomy	5%	4%
Partial gastrectomy	8%	9%
APR / Anterior resection	7%	6%
Appendisectomy	2%	1%
Splenectomy	1%	1%
Repair of perforation	1%	1%
Abdominal Hysterectomy	2%	2%
Oophorectomy	1%	2%

- Multiple response was noted

In table-4 shows Intra operative adverse events where in balanced anesthesia group, nausea seen 5% cases, followed by bradycardia seen 5%, hypotension seen 3%, muscle relaxation was adequate.

Whereas in general anesthesia group, no one had nausea, 6% cases had sweating, 4% had tachycardia, 4% had hypertension, muscle relaxation was good. The following table is given below in detail:

Table-4: Intra operative adverse events

Intra operative adverse events	Balanced anesthesia, %	General anesthesia, %
Nausea/ vomiting	5%	0%
Sweating/Tearing	0%	6%
Tachycardia/Bradycardia	Bradycardia, 5%	Tachycardia, 4%
Hypertension/Hypotension	Hypotension, 3%	Hypertension, 4%
Muscle relaxation	Adequate	Good
Pain sensation	Profound Analgesia	Analgesia adequate

In table-5 shows post-operative outcome where post-operative pain in balanced anesthesia was less and delayed than general anesthesia. Respiratory

pattern and consciousness not satisfactory 10% patient of general anesthesia. The following table is given below in detail:

Table-5: Post-operative outcome

Vas score	Balanced anesthesia	General anesthesia
At 2 hours:		
No pain	0	0
Mild pain	0	80%
Moderate pain	0	20%
Severe pain	0	
At 4 hours:		
No pain	0	0
Mild pain	0	50%
Moderate pain	0	30%
Severe pain	0	20%
At 6 hours:		
No pain	0	0%
Mild pain	30%	30%
Moderate pain	70%	50%
Severe pain	0	20%
Hypertension	0%	3%
Urinary retention		
Present	2%	
Absent		4%
Respiratory pattern:		
Normal	100%	
Not satisfactory		10%
Consciousness/ Recovery:		
Well enough	100%	
Not well		9%

DISCUSSION

The Comparative analysis of our study not only confirmed the feasibility of safely performing upper abdominal surgery under balanced anesthesia as the sole anesthetic procedure but also showed the superiority of balanced anesthesia in post-operative pain control and good recovery compared with that of general anesthesia.

Furthermore supplementary opioids were administered in significantly fewer patients having

balanced anesthesia compared with those having general anesthesia. This difference could be attributed to a combination of several factors, the avoidance of endotracheal intubation related discomfort, the presence of adequate levels of analgesia for the first few hours after the completion of the surgical procedure owing to the existing activity of the analgesia injected in the subarachnoid space and the potentially minimal stress response associated with a minimal invasive anesthetic procedure, such as balanced anesthesia [7-11].

Post-operative pain control is probably the main factor that characterizes smooth recovery [12]. On the other hand post-operative pain in general anesthesia group of patient cause's tachycardia and hypertension. Also due to pain patient take shallow and insufficient respiration which may cause cyanosis in general anesthesia group of patient. On the other hand in balance anesthesia group of patient normal respiratory pattern persist [13, 14].

Moreover, it appears that balanced anesthesia is more effective than general anesthesia in post-operative pain control during the patients hospital stay. From these preliminary data, it appears that balanced anesthesia is a promising method of anesthesia for upper abdominal surgery and with proper refinements; it could potentially evolve as the new gold standard anesthetic approach for elective upper abdominal surgery in healthy patients [15].

CONCLUSION

According to the findings of this study, patients' consciousness and pain management capacity are better in patients undergoing upper abdominal procedures under balanced anesthesia than in patients undergoing general anesthesia in the post-operative manner.

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