



PREOPERATIVE ANXIETY AND FEAR OF GENERAL ANESTHESIA

Dr. Santanu Kumar Dash	M.B.B.S., M.D. (Anaesthesiology), Assistant Professor, Department of Anaesthesiology Hi-Tech Medical College and Hospital, Bhubaneshwar, Orissa
Dr. Shovan Kumar Rath	M.B.B.S., M.D. (Anaesthesiology) Assistant Professor, Department of Anaesthesiology Hi-Tech Medical College and Hospital, Bhubaneshwar, Orissa
Dr. Ajay Kumar Bakhla	M.B.B.S., M.D., DPM. Assistant Professor of Psychiatry, Department of Psychiatry, Rajendra Institute of medical sciences, Ranchi, Jharkhand, India-834009

ABSTRACT

Aims: The aim of present study was to investigate the preoperative anxiety and its association with fear of general anesthesia.
Materials and Methods: This cross sectional, observational study consisted of 82 patients admitted to surgical ward for any planned operative procedure under general anaesthesia. Consenting patients provided their socio demographic information and anxiety subscale of Hospital Anxiety and Depression Scale (HADS) was applied.
Results: In a total of 84 patients the mean age was 36.63 ± 8.99 years. We categorized the sample into a High Anesthesia Anxiety (HAA) group and Low Anesthesia Anxiety (LAA) based on above and below mean APAIS score (7.5). The mean age for HAA was 36.21 ± 8.83 years and 37.13 ± 9.28 years was for LAA. Result shows significant high anxiety for HAA group in HADS Anxiety scores (13.2 ± 2.71 vs 9.71 ± 2.82 ; $t = 5.760$, $p = .000$) and Total APAIS score (26.28 ± 2.62 vs 18.89 ± 6.39 ; $t = 6.672$, $p = .000$).
Conclusions: Preoperative anxiety is found to be high, in persons having fear of general anesthesia.

KEYWORDS

Preoperative, Anxiety, Anesthesia.

INTRODUCTION

Preoperative anxiety is a broad entity that may include a prospective surgical patient's concern about his illness, hospitalization, anesthesia and surgery, or the unknown [1]. And the incidence of preoperative anxiety has been estimated to vary from 11 to 80% in the adult [2].

Many studies reported that fear or anxiety for anesthesia constitutes the larger part and percentage of preoperative anxiety. Studies reported 62% and 75% subjects felt anxious about going under anesthetic [3-5]. whereas anxiety for specific surgical procedure was found only 15% [4-5]. Contributory factors to preoperative anxiety may include concern about pain during or after the procedure [6-7] and other psychophysical considerations [8-11]. A study examined and found that children, who were anxious during the induction of anesthesia, have an increased likelihood of developing postoperative negative behavioral changes [12]. Higher level of preoperative anxiety may be associated with a slower and more complicated postoperative recovery [13].

These fears of anesthesia and preoperative anxiety may require personalized approach to providing information by anesthetist helps in better allay anxiety [14]. Other option includes ant anxiety medications such as Midazolam and benzodiazepines as a pre anesthetic aid in anxious patients [15-16].

The aim of this study was to determine the preoperative anxiety and fear of anesthesia associated with it.

MATERIALS AND METHOD

The aim of the present study was to assess for pre operative anxiety and its comparison among persons with high and low anaesthesia anxiety. This study was conducted at surgical wards at Hi-Tech Medical College and Hospital, Bhubaneshwar, which is a tertiary care medical college hospital of Orissa, India. The study protocol was approved by the institutional review board of Hi-Tech Medical College and Hospital, Bhubaneshwar. It was a cross-sectional study carried out over a period of four month period (January 2017- March 2017). All consenting adult surgical patients

admitted for any planned surgery under general anesthesia or females admitted for planned caesarian section at Obstetrical ward, were included for the study. Severe illness that makes clinical interview difficult and aged above 60 years and below 18 years were excluded from the study. Exclusion criteria also included substance use disorders or alcoholism or currently withdrawal and past or current illness of any significant psychiatric disorders. All recruited patients were requested to complete a questionnaire about their socio-demographic data sheet and thereafter Hospital Anxiety and Depression Scale (HADS) and The Amsterdam Preoperative Anxiety and Information Scale (APAIS) were applied.

Tools

Socio-demographic Data Sheet: The socio demographic data sheet included age, gender, religion, Years of education and socio economic class of the patients. It also recorded clinical information like whether subjects are admitted for general abdominal surgery or Cesarean delivery of baby.

Hospital Anxiety and Depression Scale (HADS) [17]: this is very well validated scale to assess anxiety and depression among hospitalized patients. It consists 14 questions, 7 scoring anxiety and 7 scoring depression. We omitted those questions relating to depression. Patients were asked to read each question and place a tick against the reply that came closest to how they had been feeling that day. Each answer was scored 0, 1, 2 or 3. The possible range of scores was therefore 0 to 21, with higher scores indicating greater levels of anxiety. Score of 0-7 is considered normal, scores of 8-10 is borderline abnormal and scores of 11-21 is abnormal case.

The Amsterdam Preoperative Anxiety and Information Scale (APAIS) [18]: It is a well established and considered standard to assess patient's preoperative anxiety. APAIS is a self-report questionnaire, consists of only six questions that represents three separate areas: anxiety about anaesthesia, anxiety about surgery, and the desire for information. The items are rated on a five-point Likert scale from "not at all" to "extremely". The scoring may range from 5 to 30 and it is available and validated in many languages across world [19].

Procedure: It was a cross sectional observational study. All subjects were assessed for inclusion – exclusion criteria, and on qualification they were requested to fill up Socio-demographic data sheet or asked verbally and filled up by investigators. The anxiety subset of HADS and APAIS was applied on all subjects and recorded. It was done at the time of pre-anesthetic assessment before elective planned surgery.

Statistical Analysis: The collected data of all students was statistically analyzed, using Statistical Package for Social Sciences (SPSS, Inc., Chicago, Illinois) version 10.0.

Data analysis included means and standard deviations for each group, and clinical subgroup of the sample. The parametric t-test was used to determine if differences existed between the groups. Statistically significant levels are reported for p values less than or equal to 0.05. Highly significant levels are p values less than .001.

RESULTS

A total of 84 patients (56% male and 44% female) were included for the study, Table 1 summarizes the sample characteristics. The mean age of the complete sample was 36.63 ± 8.99 years. The mean years of education was 10.29 ± 2.10 . The gender distribution of the sample was 35.5 % male and 64.5 % females. Majority of the sample were belonging to Hindu religion (79.8%) and lower middle socioeconomic class (69%) (table -1) There were 47 patients from general surgical ward and 37 from obstetrics department.

Based on APAIS the mean score for anaesthesia anxiety was calculated which was 7.48 with Standard deviation 1.90. We categorized the sample into a High Anaesthesia Anxiety (HAA) group scoring above mean 7.5 on APAIS anaesthesia anxiety subscale and another group scoring below 7.5 as Low Anaesthesia Anxiety (LAA).

Out of 84 total sample size 46 and 38 constituted the HAA and LAA group respectively. The mean age for HAA was 36.21 ± 8.83 years and 37.13 ± 9.28 years was for LAA. (table 2)

Means of HADS Anxiety scores, HADS Depression scores and Total APAIS score were compared for these two groups by independent t test (table 2). Result shows significant high anxiety for HAA group in HADS Anxiety scores (13.2 ± 2.71 vs 9.71 ± 2.82 ; $t = 5.760$, $p = .000$) and Total APAIS score (26.28 ± 2.62 vs 18.89 ± 6.39 ; $t = 6.672$, $p = .000$).

But for HADS depression score there was no difference between HAA and LAA (10.52 ± 2.20 vs 10.00 ± 2.72 ; $t = .970$, $p = .335$) (table 2).

DISCUSSION

The preoperative anxieties are multi factorial, which may range from general vulnerability for anxiety to reactive situational factors, like Trait anxiety predisposes some individuals to experience more anxiety states than others, both in frequency and intensity [20]. The APAIS itself measures three factors of preoperative anxiety; namely "Anxiety about anaesthesia" "Anxiety about surgery" and "Desire for information" [21]. complex subjective response influenced by many factors including the patient's temperament, and his or her understanding or lack of understanding of their illness and the proposed surgery. Patients awaiting surgical procedures have various reasons for their preoperative anxiety [2].

We found significantly high anxiety among preoperative patients, as measured by HADS, for the complete sample it was 11.63 ± 3.26 . The found mean score are comparable with early studies, in a recent study the mean anxiety score of HADS was found to be 11.45 [Mundu et al]. In ours study in addition to HADS we also used APAIS and found equally high anxiety for surgery, for anaesthesia and need for information. We found a mean score of approximately 7.5 for anxiety about anaesthesia on a scoring range of 2 to 10.

To understand the impact of "anxiety about anaesthesia" on over all "preoperative anxiety" we grouped our sample in HAA and LAA. The findings of significantly higher "preoperative anxiety" among HAA implicates that "anxiety about anaesthesia" is significant factor and contributor of the construct. There may be various other attributable factors, including fear of death or disability (22), fear of mistakes during the surgery, uncertainty or surgery postponement (23). Hence in order to counteract "preoperative anxiety" we need to tackle "anxiety about anaesthesia". A preoperative counseling may be helpful to satisfy the desire for information and issues related with "anxiety about anaesthesia" from the perspective of the patient. In addition, better doctor patient communication, information, attention to queries by the patient may also be required (24,25). The HADS depression score for HAA and LAA group remains similar, that ours study affirms that "preoperative anxiety of anaesthesia" is not influencing "preoperative depression".

There can be two hypothetical explanations to this found relationship; firstly anxiety is a general construct which affects one and all situations. Secondly, the specific model of anxiety, where each specific anxiety is independent and may or may not causing or affecting each other. In future we need larger samples size, along with a matched control group, and some other relevant variables like disability and burden of anxiety in terms of influence on postoperative outcome.

CONCLUSION

In a group of persons with high anxiety for anesthesia, also exhibit significantly high preoperative anxiety as measured by anxiety subscale of HADS. .

Table 1. Age distribution of the sample

	Mean \pm SD	Min	Max
age	36.63 ± 8.99	5	15
Years of education	10.29 ± 2.10	19	65
		n	%
Gender	Male	30	35.5
	Female	54	64.5
Religion	Hindu	67	79.8
	Others	17	20.2
Socioeconomic Class	Lower-middle	58	69
	Upper	26	31
Types of Surgery	Gen surgical Abdominal	47	56
	LSCS	37	44

Table 2. Comparison of mean Anxiety scores according to grouped as Below and above mean anaesthesia anxiety score.

	Above mean Anaesthesia anxiety (n=46)	Below mean Anaesthesia anxiety (n=38)	t	df	Sig. (2-tailed)
Age	36.21 ± 8.83	37.13 ± 9.28	-.461	82	.646
Years of education	10.76 ± 1.70	9.73 ± 2.41	2.275	82	.026
Total HADS Anxiety Score	13.2 ± 2.71	9.71 ± 2.82	5.760	77.750	.000
Total HADS Depression Score	10.52 ± 2.20	10.00 ± 2.72	.970	82	.335
Total APAIS Score	26.28 ± 2.62	18.89 ± 6.39	6.672	47.237	.000

References

1. Ramsay MAE. A survey of preoperative fear. *Anaesthesia* 1972;27:396-402
2. Kain ZN, Severino F, Alexander GM, Pincus S, Mayes LC. Preoperative anxiety and postoperative pain in women undergoing hysterectomy. A repeated-measures design. *J Psychosom Res* 2000;49:417-422.
3. Kain ZN, Wang SM, Mayes LC, Caramico LA, Hofstadter MB. Distress during the induction of anesthesia and postoperative behavioral outcomes. *Anesth Analg*. 1999;88:1042-7.

4. Mavridou P, Dimitriou V, Manataki A, Arnaoutoglou E, Papadopoulos G. Patient's anxiety and fear of anesthesia: Effect of gender, age, education, and previous experience of anesthesia. A survey of 400 patients. *J Anesth*. 2013;27:104–8.
5. Tolksdorf W, Berlin J, Rey ER, Schmidt R, Kollmeier W, Storz W, et al. Preoperative stress. Study of the mental behavior and parameters of physiological stress in non-premedicated patients during the preoperative period. *Anaesthesist*. 1984; 33:212–7.
6. Johnson N, Crompton AC. Who finds cervical laser therapy painful? *Gynecol Oncol*. 1994;52:44–9.
7. Mendl G. The effect of the preanesthetic interview on anxiety prior to minor interventions. *Cah Anesthesiol*. 1990;38:237–9.
8. Gajraj NM, Sharma SK, Souter AJ, Pole Y, Sidawi JE, et al. A survey of obstetric patients who refuse regional anaesthesia. *Anaesthesia*. 1995;50:740–1.
9. Tolksdorf W. The preoperative mental state. *Fortschr Med*. 1984;102:342–5.
10. Quinn AC, Brown JH, Wallace PG, Asbury AJ. Studies in postoperative sequelae. Nausea and vomiting – Still a problem. *Anesthesia*. 1994;49:62–5.
11. Papanikolaou MN, Voulgari A, Lykouras L, Arvanitis Y, Christodoulou GN, Danou-Roussaki A. Psychological factors influencing the surgical patient's consent to regional anesthesia. *Acta Anaesthesiol Scand*. 1994;38:607–11.
12. Kain ZN, Wang SM, Mayes LC, Caramico LA, Hofstadter MB. Distress during the induction of anesthesia and postoperative behavioral outcomes. *Anesth Analg*. 1999 May;88(5):1042–7.
13. Mathews A, Ridgeway V. Personality and surgical recovery: A review. *Brit J of Clin Psychol* 1981;20 :243-260
14. Burkle CM, Mann CE, Steege JR, Stokke JS, Jacob AK, Pasternak JJ. Patient fear of anesthesia complications according to surgical type: potential impact on informed consent for anesthesia. *Acta Anaesthesiol Scand*. 2014 Nov;58(10):1249-57.
15. Egan KJ, Ready LB, Nessly M, Greer BE. Self-administration of midazolam for postoperative anxiety: A double blinded study. *Pain*. 1992;49:3–8.
16. Kogan A, Katz J, Efrat R, Eidelman LA. Premedication with midazolam in young children: A comparison of four routes of administration. *Paediatr Anaesth*. 2002;12:685–9.
17. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand* 1983;67:361-70.
18. Moerman N, Van Dam FS, Muller MJ, Oosting H: The Amsterdam preoperative anxiety and information scale (APAIS). *Anesth Analg* 1996, 82:445–451.
19. Boker A, Brownell L, Donen N: The Amsterdam preoperative anxiety and information scale provides a simple and reliable measure of preoperative anxiety. *Can J Anaesth* 2002, 49:792–798.
20. Meijer J (2001) Stress in the relation between trait and state anxiety. *Psychol Rep* 88:947–964
21. Maurice-Szamburski, Loundou A, Capdevila X, Bruder N and Auquier P. Validation of the French version of the Amsterdam preoperative anxiety and information scale (APAIS). *Health and Quality of Life Outcomes* 2013 11:166.
22. Olatosi JO, Kushimo OT, Okeke CI, Oriyomi OO. Postoperative nausea and vomiting in adult Nigerians. *Nig Q J Hosp med* 2008;18:227-230.
23. Sanjay P, Dodds A, Miller E, Arumugan PJ, Woodward A. Cancelled elective operation: an observational study from a district general hospital. *J Health Organ Manag* 2007;21: 54-58
24. Harrera-Espineira C, Rodriguez DA, Rodriguez DCM, Valdivia AF, Sanchez IR. Relationship between anxiety levels of patients and their satisfaction with different aspects of health care. *Health policy* 2009;89(1): 37-45
25. Sanjuan M, Gimeno B, Sariano PMJ, Bazan MR, Contin GA. Psychological distress and preoperative fear in surgical patients *Rev Esp Anesthesiol Reanim* 1999;46:191-196