International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

Original Research Article

Evaluation and Comparison of Preoperative Anxiety in Patients Undergoing Combined Surgery (Phacoemulsification and Trabeculectomy), Trabeculectomy and Phacoemulsification

Aditi Singh[1], Shibi Dev[2], Shilpa N[3], Deepti Nanwani[1], Satish Prabhu[4], Sri Ganesh[5]

[1]Fellow in Glaucoma, [2]Head of the Department and Consultant of Glaucoma,
[3]Consultant in Glaucoma,
[4]Medical Superintendent, [5]Chief of Nethradhama Superspeciality Eye Hospital,
Jayanagar, Bangalore.

Corresponding Author: Aditi Singh

Received: 02/12/2014 *Revised: 09/01/2015* *Accepted: 17/01/2015*

ABSTRACT

Purpose: To estimate and compare the preoperative anxiety in patients requiring combined phacoemulsification and trabeculectomy surgery, trabeculectomy surgery only and phacoemulsification only by using APAIS (Amsterdam Preoperative Anxiety and Information Scale) questionnaire. To identify the stress-inducing elements before surgery.
Design: Prospective, observational study
Materials and Methods: We performed a prospective study on 100 adult patients who underwent either phacoemulsification or phacoemulsifiaction with trabeculectomy or only trabeculectomy. The APAIS score was given to the patients after the surgical procedure. A global anxiety score (ranging from 4 to 20) above 10, defined patients with a high level of preoperative anxiety. We tried to identify among these patients the factors related to surgery which caused them anxiety. We also compared the anxiety levels among patients undergoing cataract surgery to those undergoing glaucoma surgeries.
Results: 43 patients underwent phacoemulsification, 51 - combined surgery and 6- trabeculectomy. 45 patients were operated under topical and 55 under local anesthesia. 23 % of patients had high anxiety levels. Patients with glaucoma [66.67%] (p=0.001) and glaucoma with cataract [29.41%] (p=0.005), were more anxious about the surgery than patients with cataract alone [9.30%]. Patients operated under local anesthesia were more anxious about surgery (p=0.001) than those operated under topical anesthesia. Women were more anxious [26%] than men [20%].
Conclusion: All the patients who are scheduled to undergo ophthalmic surgery, cataract, glaucoma or any other surgery, should be counselled properly by the treating ophthalmologist which will help in reducing the preoperative anxiety thereby improving the quality of care and post operative outcome.
Key Words: Preoperative anxiety, Amsterdam Preoperative Anxiety and Information Scale, combined surgery.

INTRODUCTION

Preoperative anxiety is expressed by around sixty percent of the patients, [1] undergoing surgery. A patient who is completely aware about the procedure and whose concerns have been addressed prior

to the surgery is likely to be less anxious both peri and postoperatively. Preoperatively the patients are usually anxious about the success of the surgery, the type and side effects of anesthesia, intra and postoperative pain, duration of rest post surgery etc.[2] Certain degree of preoperative anxiety is natural for any patient , however excessive anxiety can lead to pathophysiological responses such as hypertension, tachycardia, decreased ability to tolerate pain both intra and postoperatively.[3,4] Other factors influencing the preoperative anxiety are - the type of surgery, duration of surgery, patients knowledge regarding the disease and the surgery, [5] duration of hospital stay, [6] the type of anesthesia. It also depends upon various psychological parameters such as, the general level of anxiety, personality characteristics,[7] psychological or psychiatric comorbidity,[8] sensitivity to pain, [9] social support, [10] life satisfaction or coping style. [11]

Aim:

1.To estimate and compare the preoperative anxiety in patients requiring combined phacoemulsification and trabeculectomy surgery, trabeculectomy surgery only and phacoemulsification only by using APAIS (Amsterdam Preoperative Anxiety and Information Scale) questionnaire.

2.To identify the stress-inducing elements before surgery.

Type of study*:*

Prospective, observational study.

MATERIALS AND METHODS

A prospective study of adult patients undergoing combined surgery (phacoemulsification with trabeculectomy), trabeculectomy only and phacoemulsification only was conducted over a period of six months, from 1st March 2014 to 31st August 2014, in a tertiary care eye hospital of South India [Bangalore]. The APAIS (Amsterdam Preoperative Anxiety and Information Scale) questionnaire was given to the patients after the surgery. The patients were informed about the aim of the study and then requested to participate.

All the patients undergoing phacoemulsification and two patients for trabeculectomy, were operated under topical anesthesia [lignocaine 4%]. Rest of the patients was operated under local anesthesia [peribulbar injection of lignocaine 2% and bupivacaine 0.5%]. It was first experience of surgery for all the patients.

The APAIS (Amsterdam Preoperative Anxiety and Information Scale) questionnaire consists of six items. The items are rated on a five point Likert scale with the end poles “not at all” (1) and “extremely” (5). Two items are dedicated to the assessment of anaesthesia-related anxiety, two items assess surgery-related anxiety, and two items evaluate the desire for information. Thus, the APAIS assesses anxiety about anaesthesia, anxiety about surgery (with the sum of both serving as the global anxiety index), and the desire for information.

Items of the Amsterdam Preoperative Anxiety and Information Scale:

APAIS questionnaire consists of six items:

1. I am worried about the anaesthetic
2. The anaesthetic is on my mind continually
3. I would like to know as much as possible about the anaesthetic
4. I am worried about the procedure
5. The procedure is on my mind continually
6. I would like to know as much as possible about the procedure.

The items are rated on a five point Likert scale with the end poles “not at all” (1) and “extremely” (5). It represents the two scales anxiety (Item 1, 2, 4 and 5) and need-for-information (Items 3 and 6). The answers are added up to form two scales, anxiety scale which ranges from 4 to 20 and

need for-information scale with a range from 2 to 10. A higher value reflects a higher anxiety as well as higher information requirement.

After the surgery patients were also asked to highlight the most stress inducing element about the surgery.

Inclusion criteria:

Adult patients undergoing combined surgery (phacoemulsification with trabeculectomy), trabeculectomy surgery and phacoemulsification surgery over a period of six months.

Exclusion criteria:

- Patients below 18 years of age.
- Patients unwilling to participate in the study.

Statistical Analysis:

The quantitative variables were expressed as mean +/- std. deviation and compared using Unpaired t-test and ANOVA. Also the qualitative variables were expressed as frequencies (percentages) and compared using Chi-square test. Karl pearson's and spearmans correlation coefficient was used to find correlations between quantitative variables.

The analysis was done using SPSS version 15.0 software.

RESULTS

Total numbers of patients enrolled were 100. 50 were men and 50 women. The mean age was 67.7 years ± 9.49 (Table 1). Number of patients in each of the surgical groups is shown in Table 2. 45 patients were operated under local anesthesia and 55 under topical. All the patients were undergoing surgery for the first time.

Number of patients who were more anxious due to surgery as compared to anesthesia or vice versa are given in Table 3a. Anxiety due to anesthesia was significantly less as compared to anxiety due to surgery Table 3b.

23 patients (23%) had high anxiety score of ≥ 11. 4 (9.30 %) patients undergoing phacoemulsification, 15 (29.41%) patients undergoing combined surgery and 4 (66.67%) patients undergoing trabeculectomy had high anxiety score. Mean anxiety score among all the three groups is displayed in Table 4a.Anxiety score in patients undergoing trabeculectomy and combined surgery was significantly more than those undergoing phacoemulsification alone (Table 4b).

Table 1: Age wise distribution of study population

Age	n
18 - 30	0
31 - 40	1
41 - 50	2
51 - 60	15
61 - 70	47
71 - 80	26
81 - 90	9
TOTAL	**100**
Mean	67.7
± sd	9.49

Table 2: Number of patients in each surgical group

Procedure	n
Phacoemulsification	43
Combined surgery	51
Trabeculectomy only	6
TOTAL	**100**

Table 3a: Comparison of number of patients anxious due to anesthesia and due to surgery

Anxiety due to	n
Anesthesia > Surgery	8
Anesthesia = Surgery	32
Anesthesia < Surgery	60
TOTAL	**100**

Table 3b: Comparison of anxiety due to anesthesia and due to surgery

	Anxiety due to		p-value
	Anesthesia	Procedure	
Mean	4.01	4.94	< 0.001
± sd	1.28310702	1.35452851	

Table 4a: Mean anxiety score of each procedure

Procedure	Anxiety Score	
	Mean	± sd
Phacoemulsification	8.07	1.94
Combined Surgery	9.49	2.09
Trabeculectomy only	11.50	3.51

Table 4b: Significance of anxiety-phacoemulsification in comparison to glaucoma surgery(combined and trabeculectomy)

p-values	Phacoemulsification	Combined Surgery	Trabeculectomy only
Phacoemulsification	-	0.005	0.001
Combined Surgery		-	0.093
Trabeculectomy only			-

Patients undergoing surgery under local anesthesia were significantly more anxious regarding the surgery, had higher global anxiety score as compared to those under topical anesthesia and had a greater need for information (Table 5). This can be attributed to the fact that most of these patients were glaucoma patients who were more worried about two surgical procedures in one sitting or other aspects pertaining to the disease and also due to fear of injection in the eye and its side effects.

More females (26%) as compared to males (20%) had a higher anxiety score. Anxiety due to anesthesia, due to surgery and the need for information was more in females. (Table 6). Among the patients, 9 had higher need for information (score 8-10), 4 males and 5 females. Amongst them , 2 patients were for phacoemulsification, 4 for combined surgery and 3 for trabeculectomy, thus patients who had to undergo combined surgery were most in need for information , probably due to two surgeries being performed in one sitting. Patients who were posted under local anesthesia had a higher need for information and these were the patients undergoing combined surgery as well as trabeculectomy (Table 7). The most stress inducing element before the surgery was visual loss, followed by the surgical site and the least was rest following the surgery (Chart 1).

Table 5: Significance of anxiety due to topical and local anesthesia in the below mentioned groups

	Type of Anaesthesia	Mean	± sd	p-value
Anxiety due to Anesthesia	Topical	3.89	1.28	0.396
	Local	4.11	1.29	
Anxiety due to surgery	Topical	4.47	1.46	0.001
	Local	5.33	1.14	
Global Anxiety score	Topical	8.38	2.40	0.014
	Local	9.51	2.12	
Need for information	Topical	4.69	1.78	0.031
	Local	5.40	1.47	

Table 6: Gender distribution of anxiety in the below mentioned groups

	Gender	Mean	± sd	p-value
Global anxiety score	Male	8.92	2.49	0.730
	Female	9.08	2.13	
Anxiety due to Anesthesia	Male	3.92	1.43	0.486
	Female	4.10	1.13	
Anxiety due to surgery	Male	4.92	1.40	0.883
	Female	4.96	1.32	
Need for information	Male	5.02	1.65	0.718
	Female	5.14	1.67	

Table 7: Need for information in each type of anesthesia

Type of Anesthesia→	Topical		Local	
Need for information↓	**n**	**%**	**n**	**%**
Little/No requirement	25	55.56%	16	29.09%
Average requirement	16	35.56%	34	61.82%
High requirement	4	8.89%	5	9.09%
TOTAL	**45**	**100%**	**55**	**100%**

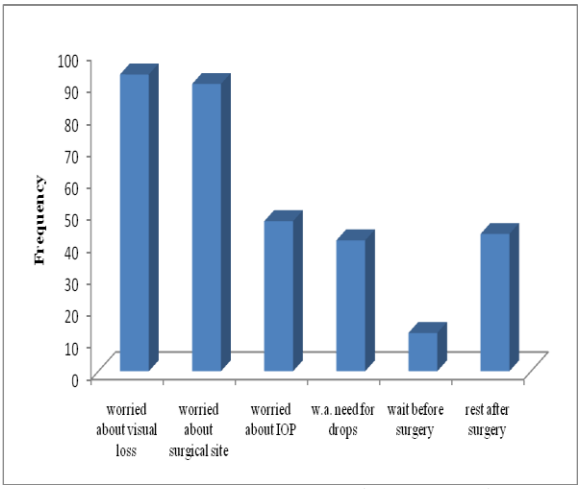

Chart 1: (Stress inducing elements before surgery for all the patients)

96.08% of patients undergoing combined surgery and 100% of the patients undergoing trabeculectomy were worried about visual loss as compared to 88.37 % of the patients undergoing phacoemulsification only. 80.39 % of patients undergoing combined surgery and 83.33% of the patients undergoing trabeculectomy were worried about intraocular pressure. (Table 8)

Table 8: Stress inducing elements before surgery for each of the three procedures

Stress inducing elements before surgery	Phacoemulsification		Combined surgery		Trabeculectomy only		p-value
	n	%	n	%	n	%	
worried about visual loss	38	88.37%	49	96.08%	6	100.00%	0.271
worried about surgical site	35	81.40%	49	96.08%	6	100.00%	0.043
worried about IOP	1	2.33%	41	80.39%	5	83.33%	< 0.001
worried about need for drops	4	9.30%	35	68.63%	2	33.33%	< 0.001
wait before surgery	2	4.65%	9	17.65%	1	16.67%	0.156
rest after surgery	20	46.51%	20	39.22%	3	50.00%	0.728

DISCUSSION

Glaucoma is a silent, asymptomatic disease which irreversibly hampers the patients' visual abilities. Glaucoma is the second largest cause of blindness worldwide after cataract. WHO estimated that about 105 million people suffer from glaucoma worldwide and an estimated 5.2 million are blind from it. It is responsible for 13.50 % of the total burden of world's blindness. [12] It causes not only visual morbidity but also mental stress to the patient. Many patients of glaucoma have been found to be depressed as well as anxious in several studies. [13-15] In a study done on glaucoma patients, it was shown that patients with glaucoma had a significantly higher depression score as compared to those having cataract alone. [16] Studies have also been done to document anxiety levels before cataract surgery. [17,18]

To the best of our knowledge no studies have been done to compare the preoperative anxiety level in patients of cataract as well as glaucoma .In our study, patients were scheduled to undergo either cataract surgery / glaucoma surgery alone or a combined procedure. We used the APAIS (Amsterdam Preoperative Anxiety and Information Scale) to assess the anxiety of the patients before surgery as well as their need for information. Various other standard measures are available to assess anxiety such as Visual Analogue Scale (VAS) and the State Version of the State Trait Anxiety Inventory (STAI), however we chose APAIS scale because it is easy to understand and is patient friendly. Since the items are formulated in a general manner (I am worried about the anaesthesia / surgery) and not specifically for one illness or treatment the application area of the APAIS is very broad. It takes around one minute for the patient to fill this questionnaire because of its high comprehensibility.

APAIS has been used in various surgical procedures but not much in ophthalmic surgeries. In the study done by Lemaître S et al, preoperative anxiety level in patients undergoing glaucoma surgery was documented using APAIS. [19] In this study, 42% of the glaucoma patients and 48% of the women had a total anxiety score ≥ 11. In our study out of the patients undergoing glaucoma surgery, 29.41% patients undergoing combined surgery and 66.67% patients undergoing trabeculectomy had high anxiety score (score of ≥ 11). Similar to the study done by Lemaître S et al, in our study, surgery caused more anxiety than anesthesia and the most stress inducing element was visual loss due to surgery.

The patients should be encouraged to ask questions and get their doubts cleared. The doctors and patient care counsellers

should explain regarding the anesthesia (local and combined), the surgery details and visual prognosis in a way, that has least affect on the mental status of the patient and they remain less anxious before the surgery. A strong doctor patient relationship goes a long way in allaying their fears. Anxiety testing is feasible in the preoperative period. It allows detection of patients with high anxiety, encouraging appropriate steps to ameliorate this.

CONCLUSION

All the patients who are scheduled to undergo ophthalmic surgery, be it cataract, glaucoma or any other surgery, should be counselled properly by the treating ophthalmologist. Establishing preoperative counselling clinics and proper counselling by the treating doctor or the operating surgeon will help in reducing the preoperative anxiety thereby improving the quality of care and post operative outcome.

ACKNOWLEDGEMENT

We sincerely acknowledge the help of Mr. Vajala Ravi, Assistant Professor of Statistics, Lady Shri Ram College, Delhi.

REFRECNCES

1. Van den Bosch JE, Moons KG, Bonsel GJ, Kalkman CJ: Does measurement of preoperative anxiety have added value for predicting postoperative nausea and vomiting? Anesth Analg 2005, 100:1525–1532.
2. Wilson EE. Preoperative anxiety and anaesthesia: their relation. Anesth Analg. 1969; 48:605-9.
3. Williams JGL, Jones JR. Psychophysiological responses to anesthesia and operation. JAMA 1968; 203: 415–7.
4. Nelson FV, Zimmerman L, Barnason S, Nieveen J, Schmaderer M. The relationship and influence of anxiety on postoperative pain in the coronary artery bypass graft patient. J Pain Symptom Manage 1998; 15: 102–9.
5. Sjoling M, Nordahl G, Olofsson N, Asplund K. The impact of preoperative information on state anxiety, postoperative pain and satisfaction with pain management. Patient Educ Couns. 2003; 51:169-76.
6. Mitchell M. Patient anxiety and modern elective surgery: a literature review. J Clin Nurs. 2003; 12:806-15.
7. Weinryb RM, Gustavsson JP, Barber JP. Personality predictors of dimensions of psychosocial adjustment after surgery.Psychosom Med. 1997; 59:626-31.
8. Caumo W, Schmidt AP, Schneider CN, Bergmann J, Iwamoto CW, Bandeira D, Ferreira MB. Risk factors for preoperative anxiety in adults. Acta anaesthesiol Scand. 2001; 45:298-307.
9. Caumo W, Schmidt AP, Schneider CN, Bergmann J, Iwamoto CW, Bandeira D, Ferreira MB. Preoperative predictors of moderate to intense acute postoperative pain in patients undergoing abdominal surgery. Acta anaesthesiol Scand. 2002; 46:1265-71.
10. Elizur Y, Hirsh E. Psychological adjustment and mental health two months after coronary artery bypass surgery: a multisystemic analysis of patients' resources. J Behav Med. 1999; 22:157-77.
11. Kopp M, Bonatti H, Haller C, Rumpold G, Söllner W, Holzner B, Schweigkofler H, Aigner F, Hinterhuber H, Gunther V. Life satisfaction and active coping style are important predictors of recovery from surgery. J Psychosom Res. 2003;55:371-7.
12. World Health Organization. Press Office fact sheet. 1997; 143: 2.
13. Mabuchi F, Yoshimara K, Kashiwagi Ket al. High Prevalance of Anxiety and Depression in patients with Primary Open Angle glaucoma. J Glaucoma. 2008: 17: 552-7.
14. Dawodo OA, Otakpor AN, Ponmwan CU. Common Psychiatric Disorders in

glaucoma patients as seen at University of Benin Teaching Hospital Benin City Nigeria. J. Medical and Biomedical Research. vol 3/1:42-7.
15. Uzma Fasih, M.Munir Hamirani, Asad Raza Jafri, S Urooj Riaz, Arshad Shaikh. Assessment of Anxiety and Depression in Primary Open Angle Glaucoma Patients (A Study of 100 Cases) Pak J Ophthalmol 2010, Vol. 26 No. 3.
16. Erb C, Batra A, Bromer A, et al. Psychiatric Manifestations in patients with primary open angle glaucoma. Ophthalmologe. 1993; 90: 635-9.
17. Mitsonis CI, Mitropoulos PA, Dimopoulos NP, Mitsonis MI, Andriotis NM, Gitsa OE, Mitsonis IM. Anxiety and depression in cataract surgery: a pilot study in the elderly. Psychol Rep. 2006 Aug;99(1):257-65.
18. Paul S Foggitt Anxiety in cataract surgery: Pilot study Journal of Cataract & Refractive SurgeryVolume 27, Issue 10, Pages 1651–1655, October 2001
19. Lemaitre S, Blumen-Ohana E, Akesbi J, Laplace O, Nordmann JP. Evaluation of preoperative anxiety in patients requiring glaucoma filtration surgery. J Fr Ophtalmol. 2014 Jan;37(1):47-53.

How to cite this article: Singh A, Dev S, Shilpa N et. al. Evaluation and comparison of preoperative anxiety in patients undergoing combined surgery (phacoemulsification and trabeculectomy), trabeculectomy and phacoemulsification. Int J Health Sci Res. 2015; 5(2):123-129.

****