



Correlation between APAIS and VAS-A Scoring in Appreciating Anxiety.

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Abstract:

Background: About two-third of patients shows anxiety before undergoing surgery. To alleviate the anxiety of patients and to quantify the anxiety level new tools like APAIS and VAS were developed. Significant correlations value was found between APAIS and VAS scoring and various authors concluded that these can be used for screening of anxious patients. Although Spielburger state-trait anxiety inventory (STAI) scale is the current standard but it is lengthy and still there is no universally accepted brief quantitative test for preoperative anxiety assessment. Hence this study was conducted to determine is there any significant correlation between these two scales.

Material & Methods: This cross-sectional study was conducted among 150 patients in age group of 18-80 years coming for preanaesthetic checkup outpatient department for elective surgery.

Results: In the current study, the mean age of the participants was 45.43±17.86 years with a range of 18-75 yrs. Strong correlation with correlation coefficient 0.938 was observed between APAIS and VAS having P Value <0.0001.

Keywords: Amsterdam preoperative anxiety and information scale, Visual Analogue Scale, Correlation.

Introduction:

Assessment of anxiety level before surgery among patients is beneficial to both the surgeon as well as to the patients in terms of improve outcome, prevention of complications. About two-third of patients' shows anxiety before undergoing surgery.¹ The degree of anxiety level varies in each patients and it depends on various factors which can be modifiable or non- modifiable. The factors include age, gender, threshold level to stress conditions, education, pre-anaesthetic counseling, type of surgery etc.^{2,3}

Some degree of anxiety is justifiable as it is a natural response to stressful conditions but excessive level can have coarse effect on patients. This include tachycardia, rise in blood pressure, higher pain perception and poor perioperative outcome.^{4,5} Various studies reported low level of anxiety among patients who were properly counseled during their pre anesthetic checkup.⁶ Hence keeping in mind the time constraints, tools are needed to quantify the anxiety level. Preoperative assessment will have many advantages. The information can help to screen people with high level of anxiety and who may get benefit with dose adjustment of anxiolytic medications and preoperative communication. It will also help in building a good rapport with them; this will provide an opportunity to address their psychological and medical concerns. Significant correlations value was found between APAIS and VAS scoring and various authors concluded that these can be used for screening of anxious patients.⁷ Although Spielburger state-trait anxiety inventory (STAI) scale is the current standard but it is lengthy and still there is no universally accepted brief quantitative test for preoperative anxiety assessment. Hence this study was conducted to determine is there any significant correlation between the Amsterdam preoperative anxiety and information and Visual Analogue scales.

Material and Methods:

Study Design: Observational

Study Area: Department of Anaesthesiology, Dr RPGMC Kangra at Tanda, Himachal Pradesh.

Study Population- After approval by institutional Ethical Committee the study was carried out on 150 patients of both genders in age group of 18-80 years. Patients were ASA I-III, scheduled for elective surgeries.

Study duration: Jan 2021- Oct-2021

Sample Size: All the patients within this duration and who fulfilled our inclusion and exclusion criteria were included in the study

Inclusion criteria –The patient belonging to American Society of Anaesthesiology physical status I/III aged 18–80 years, scheduled for elective surgery under regional or general anaesthesia were included in the study.

Exclusion criteria

Emergency surgery

History of psychiatric disorder

Patients undergoing long-lasting treatment

Description of Tool: Section A-Socio-demographic characteristics of the patients (Age, Gender etc.)

Sections B- The patients' anxiety level was assessed utilizing questionnaire having the Amsterdam Preoperative Anxiety and Information Scale (APAIS) translated in Hindi /English language. The APAIS consists of six items on two scales: APAIS-Anxiety (four items) and APAIS-Need-for-Information (two items). APAIS-Anxiety has two subscales: Anxiety about Anaesthesia (two items) and Anxiety about Surgery (two items). Patients having APAIS < 11 were considered to be non-anxious, while patients with anxiety (≥ 11 on the APAIS-Anxiety scale) were considered anxious. Visual Analogue Scale-Anxiety cutoff point was 46 for depicting anxiety. The VAS comprised of a 100-mm horizontal line, at the left hand end of which was a statement indicating "not anxious at all" and at the right hand the statement "most anxious I can imagine". The patients were assessed twice, one day prior to surgery while doing scheduled pre-anaesthetic visit and half an hour prior to induction. The patients were educated about the anaesthesia technique during pre-anaesthetic visit and were pre-medicated with tablet Alprazolam 0.25mg at night prior and 6am in the morning of surgery. The patients were provided anaesthesia as per the standard of care protocol of institution at the discretion of the attending anaesthesiologist.

The two assessment scales were compared to one another. Pearson's correlation was used for concurrent validity testing among the two scales. A correlation coefficient (r) > 0.6 was considered significant.

Statistical Analysis

The data were entered into the Microsoft® Excel workbook 2019 and exported into Epi info v7 software. The quantitative variables were expressed as mean \pm SD, and compared using Student t-test. Categorical variables were expressed as frequency and percentage. The P-value (<0.05) was considered to be significant.

Results

The prospective and observational study assessed the correlation between the APAIS AND VAS scale in the patients scheduled for surgery under general/regional anaesthesia. A total of 150 ASA I and II patients, aged between 18 to 80 years, scheduled for elective surgery under regional and general anaesthesia were included.

In the current study, 51.3% were females and 48.7% were male. The mean age of the participants was 45.43 ± 17.86 years with a range of 18-75 yrs. There was significant correlation with correlation coefficient 0.938 was observed between APAIS and VAS having P Value <0.0001.

Table1: APAIS scoring to depict anxiety in the patients

APAIS	N(%)
No anxiety(<11)	62 (41.3%)
Anxiety(>11)	88 (58.7%)

Table2: VAS- A anxiety scoring to depict anxiety in the patients

VAS	N(%)
No anxiety(<46)	66 (44%)
Anxiety(>46)	84 (56%)

Table 3: Correlation between APAIS and VAS

	VAS	r ²	P value
	Correlation coefficient (r)		
APAIS	0.938	0.88	<0.0001

DISCUSSION:

The results obtained in our study appear to support the previous studies which reported $r=0.71$ and $0.6, P<0.001$.^{6,7} The Amsterdam Preoperative Anxiety and Information Scale APAIS was developed in 1996 by the Dutch group of Moermann.⁸ The APAIS correlates with the State-Anxiety-Scale (STAI) which is a good indicator for its validity with $r=0.74$, $r=0.67$ as well as $r=0.64$.^{8,9} The APAIS was used in various international studies in departments of ophthalmology, internal medicine, or for testing preoperative psychosocial interventions proving the validity with performance properties.^{10,11,12}

Having accurate and validated tool is important as anxiety is not only an unpleasant state but it is also associated with psycho-pathological responses and deleterious effect on postoperative outcome like prolonged hospital stay, prolonged pain and increase drug requirement.⁴ Although Spielburger state-trait anxiety inventory (STAI) scale is the current standard but it is lengthy. Kindler and colleagues recently showed that VAS was an effective measurement of preoperative anxiety in a university hospital setting as VAS scale is simple, brief and easy to perform.¹³ The drawback associated with it is “central tendency bias” because patients used an unknown method to answer their anxiety. Both the scales are quick, simple, easy to perform and reliable for the assessment of preoperative anxiety levels and showed strong correlation with each other.

Conclusion:

APAIS and VAS showed significant correlation and are feasible to assess the preoperative anxiety levels.

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