Review article: Effect of preparatory intervention to reduce anxiety among upper GI endoscopy patients

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Literature review is a guiding source of our research problem, the objectives. The main purpose of writing review of literature is to convey to the readers about the knowledge and ideas that have been already published on a particular topic. It also provides an idea about further need of research, strengths and weaknesses.

Introduction

Endoscopy is one of the anxiety provoking procedure which is routinely performed for diagnostic and therapeutic purpose.

There are existing studies which reveals the importance of anxiety relieving programs pre- endoscopic procedures. Following are the findings of some relevant studies.

A study published in 2011 suggested that the providing verbal information to the patients who are undergoing upper GI endoscopy is recommended due to its positive effects on the patient's perception, compliance and anxiety level. (Pehlivan S, Ovayolu N, Koruk M)

Although sedation is given in most of the patients before upper GI endoscopy and colonoscopy, it was found inadequate to reduce the pre-procedural anxiety levels. It is suggested to do further STUDIES BECAUSE OF inadequacy of literature.(Mehmet Sargin, Mehmet Selcuk Uluer, Eyüp Aydogan,Bülent Hanedan, published in 2016)

Use of written educational material on endoscopy to inform the patient prior endoscopy procedure was useful in reducing anxiety level. (Sevinc Kuttuturkan, Ulku Gorgulu, published in 2010)

A study indicates that the patient undergoing endoscopy procedure may have anxiety due to lack of knowledge. Proper education can decrease the level of anxiety in patients. (Prabhuswami Hiremath , Vaishali R. Mohite , Prakash Naregal , Shivaji Pawar ,Tejas Bhosale Karad, India)

A study done on panic attack during elective gastrointestinal endoscopy conclude that , Patients who experience panic attacks during endoscopic procedures appear to have significantly higher anxiety levels before the procedure. Administering the STAI questionnaire prior to the endoscopy seems to be a useful screening method for the selection of vulnerable patients who may be in particular need for conscious sedation during elective GI endoscopy. (Mitsonis C, Dimopoulos N, Zavrou M, et al.)

However, it can evoke anxiety, feelings of vulnerability, embarrassment and discomfort. The fears and concerns associated with endoscopic procedure decrease patient compliance, causing execution of OGD more difficult.

As per research studies several methods can be used to reduce patient pre-procedural worries, such as psychological interventions using relaxation and coping techniques, hypnosis, relaxation.

Conscious sedation is most widely used. Use of conscious sedation varies from hospital to hospital. Sometime higher dose of sedation is required. Drugs used for sedation are not free from side effect.

A randomized control trial was done to evaluate if conscious sedation, additional information with a videotape, or the presence of a family member during the procedure could improve the tolerance to EGD and make the execution of EGD easier.

Research methodology
Inclusion criteria:

- No prior experience of endoscopic procedures
- Age between 18 -65 years
- Patients who are capable to understand and fill up the questionnaire

Exclusion criteria:

- Any prior gastrectomy,
- psychiatric diseases or long-term psychiatric drug addiction
- presence of neoplastic or other serious concomitant diseases
- History of intolerance to benzodiazepines.

Data and sources of data

The patients were randomly assigned to four groups by a computer procedure. In the control group (Co-group), EGD was performed with topical pharyngeal anesthesia alone (100 g/L lidocaine spray). In the other three groups the following methods were used in addition to pharyngeal anesthesia: conscious sedation with i.v. midazolam 35 μg/kg (Mi-group); presence of a relative in the endoscopy room throughout the procedure (Re-group); additional information about the procedure using a videotape lasting for about 10 min (Vi-group).

Tool

Anxiety - anxiety was measured by the Spielberger State-Trait Anxiety Inventory (STAI) (14) Both kinds of anxiety were scored in the range of 20 to 80 points; a higher score indicated a greater anxiety.

Patients Tolerance (self-assessment)- Patients tolerance were assessed by asking the question: *"how did you tolerate EGD?"* (*"well", "rather badly", "badly"*), and the overall discomfort during EGD was rated on an 100-mm visual analogue scale (0: no discomfort; 100: unbearable).

Patients Tolerance (Endoscopist's assessment) – it has been rated by 100-mm visual analogue scale (0: no discomfort; 100: unbearable), and assessed the tolerance of the patients grading it into three steps: *"good", "poor", "very bad"*.

Assessment of parameters

Blood oxygen saturation (SaO2) and heart rate were continuously monitored during EGD.

Statistical Analysis

One way ANOVA and chi-square test were used to analyze the characteristics of patient in four groups. Tolerances of patients to EGD were compared in the four groups by using chi-square-test. State and trait pre-endoscopic anxiety levels, and the discomfort rated by the patients and endoscopist were analyzed using one-way and two-way ANOVA. Two-way ANOVA was also used to evaluate the influence of sex, age, and anxiety levels on the discomfort caused by EGD. Linear-regression analysis was used to assess the relationship between the state and trait anxiety scores, as well as the correlation between patients' and endoscopist's evaluation of the discomfort caused by EGD.

Result and discussion

Two hundred and twenty-six patients (90 males and 136 females, mean age 38 ± 10.62 years, range 19-63 years) have been evaluated.

There were 14.5 % of patients in Co-group, 21.1% in Mi-group, 20.6% in Re-group, 16.6% in Vi-group had a heart rate higher than 100 beats/min before starting EGD..

State anxiety scores before EGD were significantly higher in Mi-group than in the other groups ($P < 0.001$), as well as trait anxiety scores ($P < 0.001$)). State and trait anxiety scores were strongly correlated ($P < 0.001$).

In all groups the most frequent cause of fear before EGD was the fear of suffocation.

Table 1 - Demographic and clinical data of the patients

	Co-group	Mi-group	Re-group	Vi-group
Patients (*n*)	62	52	58	54
Gender (m/f)	25/37	9/43[a]	28/30	28/26
Age (yr; mean ± SD)	37.85 ± 10.44	40.13 ± 10.55	35.20 ± 10.57	39.24 ± 10.57
State anxiety (mean ± SD)	46.66 ± 10.73	54.19 ± 10.89[b]	46.03 ± 11.42	39.62 ± 9.05
Trait anxiety (mean ± SD)	38.30 ± 7.16	44.26 ± 9.43b	37.22 ± 8.21	38.05 ± 9.63

The degree of discomfort caused by EGD was lower in patients of Mi-group than in those of Co-group, but the difference was just close to threshold of significance, but did not reach it ($P = 0.059$). The evaluations of the patients and the endoscopist were strongly correlated ($P < 0.001$, m = 0.45). Mi-G: $^{b}P < 0.01$ *vs* the other three groups.

Table 2 - Tolerance to EGD

Category	Patient's assessment				Endoscopist's assessment			
	Co-G (*n*)	**Mi-G (*n*)**	**Re-G (*n*)**	**Vi-G (*n*)**	**Co-G (*n*)**	**Mi-G (*n*)**	**Re-G (*n*)**	**Vi-G (*n*)**
Good	27	42[b]	34	27	45	44[b]	54	42
Poor	31	10[b]	23	23	12	7[b]	4	7
Very bad	4	0[b]	1	4	5	1[b]	0	5

Table 3 - Discomfort caused to patients during EGD (visual analogue scale)

	Co-G (mean ± SD)	**Mi-G (mean ± SD)**	**Re-G (mean ± SD)**	**Vi-G (mean ± SD)**
Patient evaluation	33.01 ± 22.12	21.98 ± 21.60	29.17 ± 22.95	26.12 ± 21.94
Endoscopist evaluation	23.51 ± 22.99	14.17 ± 18.07	16.43 ± 14.42	20.81 ± 24.04

Table 4 - Influence of parameters on degree of discomfort caused by EGD

Parameter	**Patient's assessment**			**Endoscopist's assessment**		
	Coefficient	**SE**	***P***	**Coefficient**	**SE**	***P***
Gender	-0.251	3.153	0.937	-10.094	2.901	0.001
Age (yr)	-0.621	0.140	0.000	-0.159	0.129	0.219
Groups of patients	-1.138	1.325	0.391	-1.012	1.219	0.407
State anxiety	0.104	0.136	0.445	0.237	0.126	0.060
Time for EGD	0.046	0.039	0.237	-0.057	0.036	0.112

Endoscopic findings	-0.813	1.774	0.647	3.158	1.632	0.054

Overall there is variety of practices done to reduce anxiety and increase patient's tolerance during EGD. The above detailed randomized trial study shows that the previous experience and many other factors can influence the patient's compliance. Better tolerance and lower discomfort were found in Re-group and Vi-group than in Co-group by either the patients or the endoscopist.

Multivariate analysis showed constant differences among the groups of patients in concern of the discomfort caused by endoscopy, highlighting the usefulness of preparatory interventions in improving the tolerance to EGD.

Reference

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