

## ORIGINAL ARTICLE

# A multidisciplinary approach to improve preoperative understanding and reduce anxiety

## A randomised study

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**BACKGROUND** Emotional factors may influence reception of information provided during informed consent leading to incomplete understanding and reduced satisfaction.

**OBJECTIVE** This study was designed to test the hypothesis that a multidisciplinary approach could improve understanding of the information provided by the anaesthesiologist and in turn, reduce anxiety.

**DESIGN** A randomised controlled clinical trial.

**SETTING** Veneto Oncology Institute, Italian comprehensive cancer centre. Recruitment from December 2008 to June 2010.

**PATIENTS** Two hundred and fifty-one women requiring anaesthesia for breast cancer surgery.

**INTERVENTIONS** Women undergoing surgery for primary breast cancer were randomly assigned to either the structured anaesthesiology interview group (SAI) or the integrated multidisciplinary psycho-oncological approach (IPA). In the IPA arm, patients underwent an interview with the psycho-oncologist. Subsequently, and prior to preoperative anaesthesia evaluation, the psycho-oncologist informed the anaesthesiologist of the type of communicative strategy to adopt for each individual. In the SAI arm, patients received only the anaesthesiology interview.

**MAIN OUTCOME MEASURES** Anxiety as assessed by State-Trait Anxiety Inventory (STAI) questionnaire.

**RESULTS** Two hundred and fifty-one patients were randomised and 234 analysed: 124 in the IPA arm and 110 in the SAI arm. For both groups, mean anxiety scores, according to the STAI questionnaire, were statistically lower after the anaesthesiology visit than at baseline, with a reduction of 6.5 points for the IPA arm [95% confidence interval (CI) 4.6 to 8.4,  $P < 0.0001$ ] and 4.7 points for the SAI arm (95% CI 2.6 to 6.7,  $P < 0.0001$ ). There were no significant differences between the two groups in the mean anxiety score before and after the interview. For highly anxious patients, the STAI score decreased significantly more in the IPA group (10.2 points, 95% CI 7.4 to 13.0) than in the SAI group (6.8 points, 95% CI 3.8 to 9.8),  $P = 0.024$ .

The information provided during the anaesthesiology visit was correctly understood by more than 80% of patients and was similar in both groups.

**CONCLUSION** In breast cancer surgical patients with high levels of preoperative anxiety, a multidisciplinary approach with psycho-oncological intervention proved to be useful at the preoperative anaesthesiology interview.

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### Introduction

Preoperative consultation is essential for clinical assessment before anaesthesia and surgery. It establishes suitability for surgical treatment and provides information about the planned anaesthesia technique, postoperative

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pain management and perioperative risks. Many recent studies have focused on the importance of informed consent to anaesthesia,<sup>1</sup> confirming that it is both a legal and ethical issue. In addition to being part of a clinical contract, it is also a continuing process of mutual decision making, based on a strong therapeutic alliance between doctor and the patient. A better exchange of knowledge about anaesthesia may reduce operating room delay and cancellations, increase patient satisfaction and decrease malpractice litigation.<sup>2,3</sup>

The challenge clinicians face is that many patients do not understand even the basic information provided with their treatment plans. Even though a patient may sign a consent form stating that he or she understands what has been said, studies show that even after agreeing to or receiving care, 18 to 45% of patients are unable to recall the major risks associated with their procedures,<sup>4</sup> many cannot answer basic questions about the services they have accepted,<sup>5</sup> 44% do not know the exact nature of their operation<sup>6</sup> and most do not understand (60%) or do not read (60 to 69%) the information contained in the generic hospital informed consent forms. A recent review<sup>7</sup> shows that adequate comprehension was obtained in less than one-third of the examined studies and highlights the need for physicians to convey the relevant information to patients in a manner they can understand.

The inability to present information that patients can assimilate brings significant safety and quality of care risks, and can also trigger malpractice claims. There is an inverse relationship between the number of filed claims and the number of patient assessments, suggesting that effective communication may enhance comprehension and patient satisfaction, with benefit for the physician.<sup>8</sup> Some studies argue that patient satisfaction is strongly influenced by patient/doctor communication variables.<sup>9</sup> It has been suggested<sup>10</sup> that emotional factors may influence reception of information, leading to incomplete understanding of the consent process and damaging patient satisfaction.

Anxiety is one emotion that may have a negative impact on cognition, impairing the ability to properly process information. It has been suggested that reducing anxiety during a consultation may lead to better retention of information, a stronger physician–patient relationship and, ultimately, enhanced well being.<sup>11</sup> Physicians need to be able to use effective communication skills: an effective use of assessment, information and supportive skills can probably reduce patient anxiety.<sup>12</sup>

Several studies argue that emotional distress, in particular preoperative anxiety, may lead to a higher rate of postoperative psychological disorders.<sup>13</sup> Moreover, it may negatively affect the intraoperative and postoperative course, by increasing the requirement of anaesthetic drugs, determining higher levels of postoperative pain and reducing patient compliance with treatment.<sup>14–16</sup>

The prevalence of anxiety prior to surgery has been reported to range from 11 to 80% among adults.<sup>15,17,18</sup> Female sex and diagnosis of cancer correlate with a higher level of preoperative anxiety.<sup>19,20</sup> Research has consistently found that women diagnosed with breast cancer experience high levels of distress before surgery, which is significantly related to higher postoperative pain scores.<sup>21,22</sup>

On the basis of these findings, there is a need to develop specific procedures to reduce preoperative distress and anxiety by improving the understanding of the consent process for anaesthesia, and increasing patient satisfaction.<sup>23</sup>

The aim of this randomised study was to test the hypothesis that a multidisciplinary approach to the preoperative anaesthesia interview, (namely introducing a psycho-oncological intervention), could reduce anxiety and improve reception of the information provided.

## Materials and methods

Ethical approval for this study (Ethical Committee No. 2008/37) was provided by the Ethical Committee of the Veneto Oncology Institute, Padova, Italy on 17 November 2008. All those participating provided written informed consent. Women undergoing surgery for primary breast cancer at the Breast Surgery Unit of the Veneto Oncology Institute, aged between 18 and 70 years, with American Society of Anesthesiology (ASA) physical status classes 1 to 3, were eligible for the study.

## Trial design

The study was designed as a single-centre, parallel-group, randomised clinical trial. Randomisation was performed centrally at the Clinical Trials and Biostatistics Unit of the Veneto Oncology Institute. Patients were randomly assigned, in a 1:1 fashion using a computer-generated, stratified block scheme within the planned surgery with a block size of 6, either to the integrated psycho-oncological approach (IPA) or to the structured anaesthesiology interview (SAI).

In the IPA arm, patients underwent an interview with the psycho-oncologist. Subsequently, and prior to preoperative anaesthesia evaluation, the psycho-oncologist briefed the anaesthesiologist on the type of communicative strategy to adopt. Relevant details of the patient's emotional reaction, cognitive coping style, awareness of illness and level of compliance were briefly described, and summarised in a written schedule that the psycho-oncologist passed on to the anaesthesiologist. Additional information about the patient's personal history, to give context to her reaction to the illness and treatment, or about the fear of anaesthesia and surgery could also be included. In the SAI arm, patients received the anaesthesiology interview alone.

## Outcome measures

### Primary endpoints

The State-Trait Anxiety Inventory (STAI) questionnaire<sup>24,25</sup> was used to evaluate the efficacy of the integrated psycho-oncology approach in reducing the anxiety. STAI is a self-administered questionnaire with good psychometric properties, available in Italian.<sup>26</sup> It consists of 40 items with responses on a 4-point Likert scale. The items are grouped into two scales that measure baseline (trait) and situational (state) anxiety. Trait anxiety assesses how the respondents feel most of the time. State anxiety evaluates how respondents feel 'right now', at this moment. For this study, the state anxiety scale was used and the questionnaire was completed before randomisation at baseline assessment, and after the anaesthesiology interview.

The retention of the information provided by the anaesthesiologist was assessed by means of a list of multiitem ad hoc questions in which patients were asked to indicate the type of anaesthesia (general/local/local with sedation/spinal or subarachnoid), the perioperative risk (low/medium-low/moderate/medium-high/high) and the pre (fasting, discontinuation of therapy) and postoperative course (postsurgery bed rest, pain management). Answers to the questions were compared with the clinical data and the information provided with the informed consent.

### Secondary endpoints

The impact of the integrated psycho-oncology approach on subjective perception of anaesthesia information was assessed using a self-report inventory. Patients were asked to define as satisfactory or unsatisfactory the information received about the type and risk of anaesthesia, the amount of information presented and the time spent during the interview.

The impact of the integrated psycho-oncology approach on the degree of perceived difficulty in managing the preoperative anaesthesiology interview with patient was evaluated using a self-report inventory. The anaesthesiologist was asked to define if the interview was difficult or easy to conduct, if the patient was anxious and which items provided by the psycho-oncologist were judged most useful.

## Procedures

### Psycho-oncologist interview

The two psychologists involved in this study were graduates in clinical psychology, specialists in psychotherapy and with a documented expertise in psycho-oncology.

The interview protocol was based on the ordinary psycho-oncological clinical interview employed in the Psycho-oncology Unit of the Veneto Oncology Institute. The semi-structured interview addressed sociodemographic factors, disease awareness, psychological distress, experience of previous surgery and specific fear about

anaesthesia and surgery, coping and psychological defence style, and confidence in medical care and communication with healthcare providers.

All interviews were conducted by two clinical psychologists that were unknown to the participants and not involved in their care. Interviews ranged from 30 to 60 min and consisted of a structured set of open-ended questions and a 'help question'.

The open-ended interview questions were designed to elicit each individual's way of reacting emotionally, their ability to cope with the situation, their fear and knowledge of the disease and treatment, and their communication preferences. The questions developed for this study were based on Miller's concept of Monitor/Blunter coping style<sup>27</sup> and the Italian Psycho-oncological Society's Recommendations for Good Psycho-oncological Practice.<sup>28</sup> The 'Help' question from the Monitor-Blunter Style Scale (MBSS) was used to assess informational coping styles during the interview. MBSS was developed to evaluate differences in monitoring and blunting processing styles. The scale asks participants to imagine four hypothetical scenes that challenge the ability to cope. The scene used in this study was 'Imagine that you are afraid of flying and have to go somewhere by plane'. Patients were asked to agree or disagree with eight statements; this allowed categorisation into Monitors, who are inclined to seek information, and Blunters who tend to avoid or distract themselves from information. Four of the statements are monitoring responses and four are blunting.

On the basis of clinical judgement and the 'help' question, coping style, distress level, disease awareness, defensive mechanisms, level of trust and compliance, specific fears about anaesthesia and surgery were assessed and summarised in a report by the psycho-oncologist.

On the basis of this report, the anaesthesiologists adopted different communication approaches in order to match the amount of information to the monitor/blunter coping style and particular preferences expressed, and to adapt the content of information to disease awareness and defence mechanisms (denial). The second purpose of the interview was to understand the patient's main concerns using a nonjudgmental, empathic listening technique. More distressed patients were referred to the Psycho-Oncology Unit after the anaesthesiology visit to plan more extended counselling.

### Anaesthesiology interview

To reduce the variability between individual communication styles, the preoperative anaesthesia evaluation was conducted by two anaesthesiologists according to a standardised protocol describing the information to be provided regarding the anaesthetic technique, perioperative risk and postoperative pain management and recovery. The two anaesthesiologists involved in this study had at least 10 years experience in clinical anaesthesia.

During the interview, the anaesthesiologist reviewed the medical records, current diagnosis and treatment. A physical examination was performed including an airway assessment and pulmonary and cardiovascular examination. Preoperative tests or consultations were conducted on a selective basis to optimise perioperative management. The anaesthesiologist discussed the risks and benefits of anaesthetic options and pain management strategies with the patient, provided instructions on fasting policies, medication to continue on the day of surgery and expected duration of hospital stay. The development of a trusting relationship was encouraged, helping the patient to raise any doubts about any aspects of anaesthetic care and to understand the stress associated with anaesthesia and surgery.

In the IPA group, the anaesthesiologist tailored the amount of information provided and chose an adequate communication style following the psycho-oncologist's instructions.

### Statistical analysis

Sample size was based on the ability to demonstrate a difference of 5 points between the two arms in the state anxiety scale after the preoperative anaesthesia assessment. This magnitude of difference was chosen in order to ascertain a minimal important change corresponding to a moderate effect size.<sup>29</sup> Assuming a 0.05 significance level with 90% power (two-sided *t*-test), 240 patients would be required.

In order to estimate the state anxiety baseline value, a pilot study was performed in women with breast cancer undergoing the anaesthesiology visit/interview at the Veneto Oncology Institute. The assessed mean value resulted in 48 points with a standard deviation of 11 points.

The state anxiety scale was scored according to recommended procedures<sup>26</sup> by summing its constituent items. The scale ranges from 20 to 80, with high scores indicating the presence of high levels of anxiety. When one or two individual items were missing, the missing value was substituted with the personal scale mean of the respondent and the scale score was rounded to the upper integer number.

Differences in the clinical characteristics between the two groups were assessed using the  $\chi^2$  test. Differences in the baseline STAI score according to patient's characteristics were assessed using analysis of variance (ANOVA).

A linear mixed-model approach was used to verify whether the STAI scores were different between the IPA and the SAI groups after the anaesthesiology interview and to evaluate the changes over time in each group. The analysis used group, time and the interaction as fixed effects, and a compound symmetry covariance matrix.

A post hoc analysis was also performed to determine whether the efficacy of the intervention could be different in patients with a high basal level of anxiety. The cut-off score for high anxiety was derived from the normative data of Italian women in the age range 18 to 75 years, whose mean state anxiety score was 39.93 (SD 11.0). The cut-off between high and low anxiety states was set 1 SD above the mean, that is, scores greater than 51 would be classified as high anxiety.

The answers to each question evaluating the retention of the information received were classified as correct or incorrect on the basis of the information recorded in the clinical records. The percentage of correct answers was then compared between the two groups using a  $\chi^2$  test.

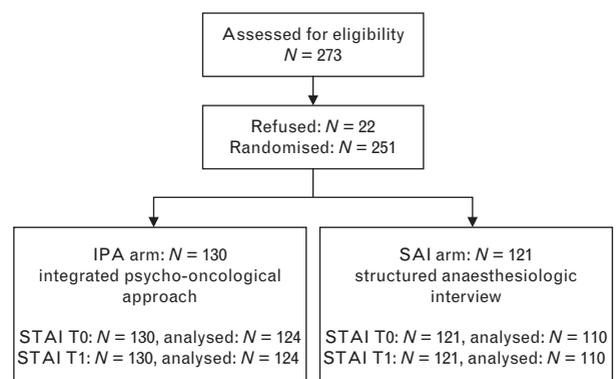
The number satisfied with the type and the amount of information received regarding anaesthesia was summarised in terms of percentages and compared between the two groups with exploratory intent, using a  $\chi^2$  test.

All *P* values were based on a two-sided test and considered statistically significant if less than 0.05. Statistical analyses were carried out with SAS (Release 9.1.3; SAS Institute, Cary, NC, USA).

## Results

From December 2008 to June 2010, 273 breast cancer patients were asked to participate in the study. Twenty-two patients declined and 251 were randomised: 130 to the IPA and 121 to the SAI arm. All patients returned the questionnaire before randomisation and after the preoperative anaesthesia evaluation. Of these, 17 returned the questionnaire unfilled or with less than 20% complete and were excluded, leaving 124 out of 130 in the IPA arm and 110 out of 121 in the SAI arm available for analysis (Fig. 1).

Fig. 1



Study diagram.

Table 1 Patients' characteristics

	IPA arm N (%)	SAI arm N (%)	P
<b>Median age (interquartile range)</b>	53.4 (47.1 to 61.9)	53.6 (46.1 to 62.5)	0.9468
<b>Marital status (missing)</b>	(2)	(4)	0.3439
Unmarried	10 (8%)	11 (10%)	
Married/living together	100 (82%)	78 (74%)	
Separate/divorced	5 (4%)	10 (9%)	
Widower	7 (6%)	7 (7%)	
<b>Living (missing)</b>	(9)	(8)	0.6692
Alone	11 (10%)	11 (11%)	
With other relatives	17 (15%)	11 (11%)	
With partner/children	87 (76%)	80 (78%)	
<b>Education (level completed) (missing)</b>	(2)	(5)	0.6521
Primary school	23 (19%)	17 (16%)	
Secondary school	43 (35%)	34 (32%)	
High school	41 (34%)	35 (33%)	
University	15 (12%)	19 (18%)	
<b>Job (missing)</b>	(2)	(5)	0.0585
Employed	62 (51%)	59 (56%)	
Retired	22 (18%)	27 (26%)	
Working at home	38 (31%)	19 (18%)	
<b>Presence of comorbidities</b>	44 (36%)	33 (31%)	0.4350
<b>Preoperative chemotherapy</b>	19 (17%)	9 (9%)	0.0925
<b>Surgery</b>			0.7024
Quadrantectomy	84 (68%)	78 (71%)	
Mastectomy	40 (32%)	32 (29%)	
<b>ASA (missing)</b>	(1)		0.4965
1	55 (45%)	45 (41%)	
2	68 (55%)	64 (58%)	
3	0	1 (1%)	

ASA, American Society of Anesthesiologists; IPA, integrated psycho-oncological approach; SAI, structured anaesthesiology interview.

The clinical characteristics of the patients and details regarding breast surgery were similar between the two arms (Table 1).

Interviews with the anaesthesiologist lasted 22.5 min in the IPA arm [95% confidence interval (CI) 21.2 to 23.9] and 22.1 min (95% CI 20.9 to 23.2) in the SAI arm.

The mean baseline anxiety score was 49.3 (SD 12.9). Analysis of clinical characteristics, as potential determinants of preoperative anxiety levels, was analysed and reported in Table 2. Only patients who received neo-adjuvant chemotherapy showed a low level of anxiety ( $P=0.015$ ).

Figure 2 shows the mean values of the state anxiety score at the two assessment points for all patients and according to high and low baseline anxiety levels. No significant differences were observed in the anxiety baseline measurements between the two arms for all patients (50.3 vs. 50.2,  $P=0.8613$ ) and for both the high (61.4 vs. 61.3,  $P=0.9941$ ) and low anxiety patients (39.3 vs. 39,  $P=0.8237$ ). No significant difference was observed between the two arms in the mean anxiety score after the anaesthesiology visit (43.8 vs. 45.5,  $P=0.3863$ ). For both arms, mean anxiety scores were statistically lower after the anaesthesiology visit than at baseline, with a reduction of 6.5 points (95% CI 4.6 to 8.4,  $P<0.0001$ ) for the IPA and 4.7 (95% CI 2.6 to 6.7,  $P<0.0001$ ) points for the SAI arm. For the 107 high anxiety patients, the state anxiety score decreased significantly more in the IPA group (10.2 points, 95% CI 7.4 to 13.0,  $n=57$ ) than in the SAI group (6.8 points, 95% CI 3.8 to 9.8,  $n=50$ ),  $P=0.024$ .

The information provided during the anaesthesiology visit was correctly understood by more than 80% of patients and was similar in both arms, irrespective of anxiety levels (Table 3).

There was no significant difference in the percentage reporting as satisfactory the amount of information received (79 vs. 70%,  $P=0.1292$ ), the time spent during the interview (78 vs. 67%,  $P=0.0583$ ), the information received regarding the type of anaesthesia (79 vs. 75%,  $P=0.4896$ ) and the anaesthesiology risk (67 vs. 66%,  $P=0.8570$ ) (Table 4). When satisfaction was analysed in the subgroup of patients with high baseline anxiety levels, the time spent during the interview was considered satisfactory by a significantly higher percentage in the IPA arm (84 vs. 67%,  $P=0.0466$ ).

The anaesthesiologist indicated that the interview was easy to conduct in more than 80% of patients but judged around 60% of them anxious. These results were similar for both arms.

With respect to the advice received from the psycho-oncologist, emotional status (56%), language code to adopt (40%) and concerns regarding surgery (35%) were considered the most useful when identifying the best communication strategy to be used by the anaesthesiologist.

## Discussion

The primary endpoint of the study was to evaluate whether a multidisciplinary approach to preoperative anxiety reduction could improve the reception of

Table 2 State anxiety mean values at baseline according to patients' characteristics

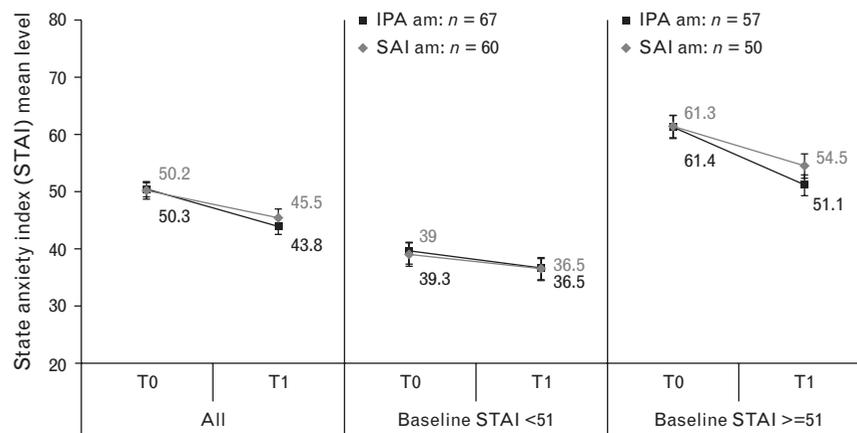
	N	Mean state anxiety at baseline	SD	P
<b>Age</b>				0.9935
≤47 (first quartile)	60	49.6	13.3	
47 to 54	60	49.5	12.8	
54 to 62	55	49.0	13.7	
>62	59	49.0	12.1	
<b>Marital status (missing)</b>	(6)			0.0756
Unmarried	21	52.5	13.1	
Married/living together	178	50.1	12.9	
Separate/divorced	15	45.9	12.6	
Widower	14	42.6	9.6	
<b>Living (missing)</b>	(17)			0.9752
Alone	22	48.8	13.9	
With other relatives	28	49.4	12.7	
With partner/children	167	49.5	12.8	
<b>Education level completed (missing)</b>	(7)			0.7355
Primary school	40	50.0	11.2	
Secondary school	77	49.4	13.0	
High school	76	48.7	13.7	
University	34	51.7	12.5	
<b>Job (missing)</b>	(7)			0.9053
Employed	121	49.3	12.8	
Retired	49	50.2	12.3	
Working at home	57	49.5	13.5	
<b>Comorbidities</b>				0.9653
Yes	77	49.2	13.0	
No	157	49.3	12.9	
<b>Preoperative chemotherapy</b>				0.0147
Yes	28	44.8	9.4	
No	206	49.9	13.2	
<b>Surgery</b>				0.3650
Quadrantectomy	162	49.8	13.3	
Mastectomy	72	48.1	12.0	

information given during the anaesthesia consultation. The study tested the hypothesis that an effective collaboration between the psycho-oncologist and the anaesthesiologist could improve the reliability of medical communication and enhance breast cancer patients' understanding of informed consent. The purpose of the psycho-oncological intervention was not only to reduce preoperative anxiety but also to help the anaesthesiologist choose the best communication strategy for

the interview. Our results confirm that preoperative anxiety in breast cancer patients is higher than in the normal population and does not correlate with socio-demographic characteristics<sup>19</sup> or the type of surgery planned.

The analysis of potential determinants of preoperative anxiety suggests an inverse correlation with preoperative chemotherapy. Patients who received adjuvant

Fig. 2



State anxiety mean values, with 95% confidence intervals, for the experimental (IPA) and control (SAI) groups. Values are reported at baseline (T0) and after the preoperative anaesthesia assessments (T1) for all patients and stratified according to a high and low baseline state anxiety level.

Table 3 Comprehension of the information received

	IPA arm %	SAI arm %	P
Type of anaesthesia	92	93	0.8205
Anaesthesiology risk	87	83	0.3496
Preoperative indications	90	93	0.3910
Drugs management	78	79	0.8720
Postoperative indications	93	90	0.4540
Pain management	87	92	0.2432
<b>Baseline STAI &lt;51</b>	54	55	
Type of anaesthesia	90	95	0.2551
Anaesthesiology risk	87	80	0.3200
Preoperative indications	88	93	0.3104
Drugs management	79	82	0.7169
Postoperative indications	96	87	0.0765
Pain management	90	93	0.4495
<b>Baseline STAI ≥51</b>	46	45	
Type of anaesthesia	95	90	0.3526
Anaesthesiology risk	88	86	0.7925
Preoperative indications	77	76	0.8857
Drugs management	77	76	0.8843
Postoperative indications	89	94	0.4000
Pain management	84	90	0.3756

Results are reported as percentages of correct answers. IPA, integrated psycho-oncological approach; SAI, structured anaesthesiology interview; STAI, State-Trait Anxiety Inventory.

chemotherapy showed a low level of anxiety. A possible explanation can be found in a transactional model of stress and coping.<sup>30,31</sup> There is an accord with this and published data on the course and prevalence of psychological morbidity in breast cancer. Longitudinal studies have generally found a resilient pattern of adjustment, as a high percentage of women maintain their levels of psychological adjustment over time.<sup>32</sup> Studies on anxiety in breast cancer patients state that the level of anxiety is higher immediately after diagnosis<sup>33</sup> and decreases over time following completion of cancer treatments.

The absence of a statistically significant lowering of anxiety between the integrated multidisciplinary psycho-oncologic approach and the structured anaesthesiology preoperative interview seems to demonstrate that in most cases, an effective doctor–patient relationship is sufficient to reduce preoperative anxiety. It has been shown that the doctor’s attitude towards his patients, the ability to elicit and respect the patient’s concerns,

provide appropriate information, as well as demonstrate empathy and develop patient trust, are the key determinants of good compliance with medical treatment.<sup>34,35</sup> Although some studies argue that knowledge about anaesthesia does not influence state anxiety levels, Lonsdale and Hutchison<sup>36</sup> reported that patients interviewed about their desire for anaesthesia information rated meeting the anaesthesiologist before surgery as the highest priority.

Patient-centred communication creating a trusting doctor–patient relationship may help reduce patients’ anxiety and facilitate assimilation of medical information, but in some specific situations, a psycho-oncological intervention has something to offer. Our results support greater anxiety reduction in the IPA subgroup with high baseline state anxiety (STAI ≥51, 46% of the investigated sample). In this group, the multidisciplinary approach allowed the anaesthesiologist to choose an appropriate communication style, matching the amount of given information to the patient’s attitude<sup>2,16</sup> and coping strategies. These results are consistent with most of the studies on preoperative anxiety-reducing interventions,<sup>37,38</sup> showing that it is still unclear whether providing patients with information has beneficial outcomes or increases arousal and discomfort,<sup>39</sup> and concluding that the amount of information should be individually tailored to meet the patient’s needs.<sup>2,16,39</sup> Future research is needed to evaluate whether a preoperative ‘need for information’ scale (such as the Amsterdam Preoperative Anxiety and Information Scale assessing patient information requirements, may help anaesthesiologists communicate better with patients.<sup>40</sup>

The other purpose of this study was to determine the degree to which patients of both groups understood the information provided during the preoperative anaesthesia consultation. In our study, the percentage of patients who reported having a high level of understanding was more than 80%, with no statistically significant difference between the two groups. Such a high level of comprehension in both groups made it difficult to obtain further

Table 4 Patients’ subjective perception of information received

	IPA arm %	SAI arm %	P
Amount of information received	79	70	0.1292
Time spent during the interview	78	67	0.0583
Information received on anaesthesia	79	75	0.4896
Information received on anaesthesiology risk	67	66	0.8570
<b>Baseline STAI &lt;51</b>	54	55	
Amount of information received	76	72	0.6019
Time spent during the interview	73	67	0.4268
Information received on anaesthesia	78	78	0.9220
Information received on anaesthesiology risk	68	72	0.6114
<b>Baseline STAI ≥51</b>	46	45	
Amount of information received	82	68	0.0911
Time spent during the interview	84	67	0.0466
Information received on anaesthesia	81	71	0.2622
Information received on anaesthesiology risk	67	59	0.4257

Results are reported as percentages of patients reporting the information received satisfactory. IPA, integrated psycho-oncological approach; SAI, structured anaesthesiology interview; STAI, State-Trait Anxiety Inventory.

improvement in the ability of patients to understand the information provided. These results are inconsistent with the existing reports<sup>7,41,42</sup> that patients have incorrect or poor comprehension of matters relevant to an informed decision, but the predictors of knowledge in informed consent remain unclear. Nevertheless, it has been suggested that allowing the patient enough time to acquire the information provided is one of the strongest predictors of patient comprehension.<sup>7,41,43</sup> Adequate time is necessary to allow discussion between the doctor and the patient and to establish a better climate in which the patient can clarify any unclear aspects.<sup>44</sup> In both groups, the mean length of the anaesthesiology interview was 22.3 min, in contrast with several studies reporting that the mean duration of preoperative evaluation ranges from 13 to 18 min,<sup>45,46</sup> confirming that an effective informed consent discussion should last 15 to 30 min.<sup>41</sup>

The secondary endpoint was to evaluate the patient's subjective perception of anaesthesia information. This was found to be satisfactory in more than 97% regarding preoperative prescriptions, anaesthesia technique, dedicated time and quality of details given during the interview, although 5.3% considered the information given about perioperative risk to be unsatisfactory and 7.1% negatively rated the amount of information received about the postoperative course. Although this suggests that the communication of these items needs to be improved, these negative perceptions correlate with the desire to receive more information about the surgical risk and the postoperative oncological and surgical outcome, rather than the pure anaesthesia risk and postoperative pain management.<sup>3</sup>

A limitation of our study is that patients and caregivers were not blinded. The multidisciplinary approach required a firm collaboration between the psycho-oncologist and the anaesthesiologist, and patients had to be informed about the psycho-oncological interview to enhance the therapeutic alliance. The design of the study makes it difficult to recognise which particular aspect of the procedure plays the most important role in anxiety reduction. Further research could focus on the impact of the psycho-oncological interview alone (without any instructions given to the anaesthesiologist) or just on nurse counselling to evaluate whether the mechanism of lowering anxiety correlates only with the possibility of sharing concerns and fears with someone.

The number of anaesthesiologists was restricted to limit the variability of the interview, but the ability to deal with the emotional aspects of illness was a determinant factor in the selection of the anaesthesiologists involved. The two selected anaesthesiologists were particularly interested in psychological distress before surgery and wanted to improve their skill in managing it.<sup>47</sup> We hypothesise that the collaboration with the psycho-oncologist during the course of the study may also have encouraged better

communication skills, and the transfer of these abilities to situations without psycho-oncological input. In order to test this hypothesis, the next step could be to compare the ability of trained vs. untrained anaesthesiologists in lowering anxiety and improving patient understanding.

## Conclusion

Despite the limitations, the important result of our study is that in most cases, an effective doctor–patient relationship is sufficient to reduce preoperative anxiety. Spending time establishing a trusting alliance is the key element of patient satisfaction. The other strength of the study is that the assessment of preoperative anxiety levels helps to improve the communication process and identify patients needing additional support. The preoperative administration of STAI is simple and may facilitate the identification of high-anxiety patients. In this subgroup, a multidisciplinary approach based on psycho-oncological counselling is effective in lowering distress and fear.<sup>48</sup>

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