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SHORT COMMUNICATIONS

Patient preferences for immediate postoperative recovery

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Background. Several attempts have been made to evaluate patients' concerns with respect to postoperative recovery. To identify aspects of postoperative recovery relevant to patients, several methodological and statistical approaches have been used. One of the first to provide useful information was Fredrick Orkin who used conjoint analysis. This methodology is usually performed by market researchers to learn about the relative importance of product attributes. We used conjoint analysis in the present study.

Methods. A total of 220 patients undergoing preoperative anaesthetic examination before impending surgery under general anaesthesia were asked to rate nine scenarios during immediate postoperative recovery based on four factors (alertness, pain, postoperative nausea and vomiting (PONV), and extra costs) each with three levels. Using conjoint analysis the relative impact of each factor on ranking the scenarios was assessed.

Results. The relative importance of the four factors (as a percentage of the preference decision) was PONV (49%), pain (27%), alertness (13%), and additional costs (11%).

Conclusion. Avoidance of PONV is a major concern for patients before surgery.

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Improved surgical and anaesthetic techniques have minimized morbidity and mortality associated with surgery. In turn, anaesthetists have focused on other issues of importance to the patients. Several attempts have been made to evaluate the patients' concerns with respect to postoperative recovery. In these studies, different methodologies have been used, including traditional face to face or paper-based interviews,[1] willingness to pay,[2] or rating of virtual scenarios.[3]

One of the first to provide useful information about patients' preferences for their postoperative recovery was Fredrick Orkin who reported results from a survey of nurses, anaesthetists, support staff, and computer personnel at a national meeting.[4] Forty-seven subjects were asked to rate 16 scenarios of immediate postoperative recovery and 15 min were given to perform the rating. Conjoint analysis was used to judge the relative contribution of each item on the final scenario rating. It was found that postoperative nausea and vomiting (PONV) was a major concern. To prevent this complication, they were willing to accept other side-effects, including extra payment (15–50 US$). Although the interesting data have not yet been published as a full paper, numerous authors have quoted the abstract to confirm the importance of antiemetic strategies.

Thus, we felt that it would be interesting to apply Orkin's approach and evaluate whether the data can be reproduced in patients about to undergo surgery. The complex methodology used by Orkin[4] (six factors, up to four levels, resulting in a model with 16 scenarios and four additional scenarios for validation of computed utilities) was modified to allow a simple questionnaire with fewer scenarios.

Methods and results

A total of 250 consecutive patients (56% females; median age 48 (range 16–76) yr) undergoing orthopaedic (48%), gynaecological (28%), urological (10%),

Table 1 The nine scenarios determined by an orthogonal main-effects plan for conjoint analysis

Scenario	Alertness	Pain	PONV	Extra costs
1	Exhausted	No	Nauseated	50 Euros
2	Clear minded	Moderate	Vomiting	50 Euros
3	Tired	No	Vomiting	25 Euros
4	Clear minded	No	No	0 Euros
5	Tired	Moderate	Nauseated	0 Euros
6	Clear minded	Mild	Nauseated	25 Euros
7	Exhausted	Mild	Vomiting	0 Euros
8	Tired	Mild	No	50 Euros
9	Exhausted	Moderate	No	25 Euros

or minor general surgical procedures (14%) performed under general anaesthesia were enrolled. Patients were interviewed after completing a preoperative visit. General information about the course and side-effects of anaesthesia was given. Of 250 patients, 28 were not able to understand the purpose of the studies. In two patients, only incomplete data was obtained. Thus, data of the remaining 220 patients was analysed. The Statistical Package for Social Sciences (SPSS, Version 10.1 for Windows) was used to create and analyse an orthogonal main-effects plan for the following four factors, each with three levels: (1) postoperative alertness, exhausted–tired–alert; (2) pain, moderate–mild or none; (3) nausea and vomiting, vomiting, nauseated or none; (4) additional costs, 50-25 Euros or none.

Conjoint analysis enables the measurement of consumer preferences or ratings of existing or possible products in terms of product attributes and their levels. The purpose of conducting a conjoint experiment is to ascertain the relative importance of product attributes, as well as the most preferred attribute levels.

Nine scenarios of postoperative recovery (out of 81 possible) (Table 1) were offered and the patients were asked to rate them from 1 (highly undesirable—would avoid this scenario if ever possible) to 9 (desirable—scenario of my choice for my impending operation) in a raising sequence. At this moment, patients knew that standardized anaesthesia care was offered and no extra money would be charged from them, regardless of their given answers.

Avoiding PONV was of major concern for the patients. This item was followed by the desire to have no or only mild pain. Restoration of postoperative vigilance and additional cost were of minor importance. The relative contributions (as percentages) of the different factors were: (1) (absence of) PONV, 49%; (2) (absence of) postoperative pain, 27%; (3) (absence of) postoperative sedation, 13%; (4) no extra charge, 11%.

Comment

Our results confirm those of Orkin. Avoidance of PONV and reducing postoperative pain should be a major goal in anaesthesia. However, there were some differences between the two surveys. For example we interviewed consecutive patients attending for surgery the next day, while Orkin surveyed medical staff and participants of a national meeting, probably most of them highly educated people. Thus, we used a simplified model, with a limited number of scenarios and less items and levels, in our trial to avoid exclusion of too many patients.

Macario[3] used a similar technique. Patients were asked to spend an amount of virtual money (100 US$) was prevent several unpleasant side-effects of anaesthesia.[3] Interestingly, the amount of money spent to prevent vomiting (18 US$) and nausea (12 US$) is greater than that to prevent other unpleasant side-effects, for example postoperative pain (17 US$) or shivering (8 US$). Concerns about PONV (23%) and postoperative pain (14%) were most often raised by patients when asked about preoperative fears before surgery.[1]

One limitation of the present study is that patients, due to instructions from our ethics committee, knew that a standardized anaesthesia technique was provided and that they were not actually charged regardless of their answers. However, dealing with virtual scenarios is a common situation when performing conjoint analysis and should not disprove our results. Furthermore, from other surveys using the willingness-to-pay method, we know that patients are not penny-pinching when their postoperative well-being is concerned. For example, patients are willing to pay 56–100 US$ for a totally effective antiemetic.[2]

It is concluded that, regardless of the surveying technique used,[1–4] avoidance of PONV followed by the control of postoperative pain are the key concerns for patients undergoing a surgical procedure under general anaesthesia. Patients are willing to accept other side-effects and also increased private costs, when PONV can be attenuated or even completely prevented.

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