



Original Contribution

Preoperative use of anxiolytic-sedative agents; are we on the right track? ☆



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Abstract

Study objective: Although anxiolytic-sedative agents are used preoperatively since the advent of anesthesia, many aspects of this treatment, including the intended effects among which anxiolysis, effectiveness, and optimal agents, remain unclear. The objective of this study was to provide insight into the preoperative use of anxiolytic-sedative agents in the Netherlands and to relate the administration of these agents to the anxiolytic-sedative state of patients.

Design: Questionnaire study.

Setting: University, general, and specialized hospitals in the Netherlands.

Patients: One anesthesiologist in each hospital was asked for details about premedication in all elective procedures, except cardiothoracic surgery, in normal weighted adults in good to fair clinical condition.

Interventions: None.

Measurements: Estimated percentage of patients receiving anxiolytic-sedative premedication, type, dose, route of administration and timing of these agents, and anxiolytic state of patients when arriving at the holding area.

Main results: All 8 university hospitals, 69 of 82 general hospitals and 2 of 3 specialized hospitals participated in this study (response rate, 84.9%). The estimated percentage of patients that received anxiolytic-sedative agents was 46.8% for in-patients and 30.4% for day care patients ($P < .0001$), with large between-hospital variation. Midazolam (62.7%), oxazepam (20.2%), and temazepam (7.8%) were most frequently used and were virtually always orally administered 1 hour preoperatively. There was no relationship between use of anxiolytic-sedative agents and reduction of perceived anxiety ($r = -0.09$, $P = .46$ and $r = -0.01$, $P = .91$ for clinical and day care patients, respectively).

Conclusions: Anxiolytic-sedative agents are used preoperatively in a substantial number of patients in the Netherlands, and the pharmacokinetic characteristics of many agents are not optimal of their intended use. In addition, we found no relationship with reduced anxiety. This study stresses the need for clear guidelines on preoperative use of anxiolytic-sedative agents.

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☆ Disclosures: None.

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1. Introduction

Anxiolytic-sedative agents are used preoperatively since the advent of anesthesia [1]. Twenty years ago, it was already concluded that much was unclear about the intended effects,

choice of optimal agents, patient selection, and effectiveness [2]. At present, the very same conclusions can be drawn.

Many reasons to administer these agents preoperatively have been described, and although there is no consensus, it is generally accepted that anxiolysis is the main goal [2–4] and that benzodiazepines are the agents of first choice and hence most frequently used [3,5,6].

Numerous studies indicate that many different benzodiazepines are prescribed within a short time frame before surgery. However, most of these agents, such as oxazepam, temazepam, and lorazepam, have pharmacokinetic properties that are not optimal for this type of use because of their slow absorption rate [7–9].

In clinical practice, the choice to administer anxiolytic-sedative agents is made by the anesthetist during the preoperative assessment and depends on many, mostly subjective, factors [10]. Validated questionnaires to guide this decision are rarely used, and this also holds for the assessment of the intended effect. In clinical practice, both are based on the subjective judgment by anesthetists of the anxiety of their patients.

Recent studies indicate that preoperative anxiolytic-sedative agents have a negative impact on the perioperative patient experience [11,12], which is remarkable in light of the current era of patient-centered care and shared decision making [13].

In addition, anxiolytic-sedative agents have important side effects, such as paradoxical reactions, oversedation, and upper airway obstruction. Moreover, they may have unintended effects on cognitive function, cognitive recovery, and life function tasks. Therefore, it seems obvious that liberal preoperative use of these agents should be discouraged, especially since there is an abundance of nonpharmacological alternatives such as integrated preoperative meeting, cognitive behavioral therapy, and relaxation therapy. These techniques are valuable to increase patients' sense of control over medical care and have shown greater efficacy when combined with benzodiazepines [2,6,14].

The purpose of this study was to provide insight into the preoperative use of anxiolytic-sedative agents in the Netherlands and to relate the administration of these agents to the anxiolytic-sedative state of preoperative patients as perceived by anesthetists.

2. Materials and methods

This survey-based study does not require approval from a Research Ethics Committee under Dutch law, as it does not involve recruiting patients or health care staff as research participants.

After review of the literature, a pilot questionnaire was constructed, which was restricted to adult patients in a fair to good medical condition, with normal weight, and scheduled for elective, noncardiothoracic surgery. After feedback of 4 fellow colleagues working in different hospitals, the final version of

the survey (see [Addendum](#) for a translated version) was sent by a personalized e-mail to 1 colleague in each of a total of 93 hospitals in the Netherlands (8 university, 82 general, and 3 specialized hospitals). In 53 hospitals, colleagues from our personal network were contacted to ensure a high response rate. For the remaining hospitals, the anesthesiology department was contacted by telephone to inquire which anesthetist had most affinity with preoperative management and would therefore be best to contact. When no response was obtained within 2 weeks, a second e-mail was sent and, when necessary, a third one 2 weeks later. If this did not result in a response, the anesthetist was contacted by telephone. When results were incomplete or not clear, the anesthetist was contacted by telephone or e-mail. Data collection started in January 2014 and was terminated in August 2014, when data of 84.9% of hospitals was obtained.

2.1. Calculations and statistical analysis

Data are presented as mean (SD). In case of 1 center using different dosages of a particular agent, the weighted mean was calculated. A paired *t* test was used to compare the percentage of patients who received anxiolytic premedication between clinical and day care patients. Spearman's correlation was used to analyze the relationship between the use of anxiolytic premedication and the anxiolytic-sedative state. A *P* value less than .05 was considered significant. Statistical analyses were performed using IBM SPSS statistics 20 (IBM, Armonk, NY) and Graphpad Prism 5.0 (Graphpad software, La Jolla, CA).

3. Results

3.1. Response rate and presence of guidelines

Complete results were obtained from all 8 university hospitals, 69 (84%) of 82 general hospitals, and 2 (67%) of 3 specialized hospitals, resulting in an overall response rate of 84.9%. Guidelines for preoperative use of anxiolytic-sedative agents were present in 29 (36.7%) and absent in 47 (59.5%) hospitals. In 3 (3.8%) hospitals, the anesthetist surveyed was unsure whether there was a guideline present.

3.2. Use of anxiolytic-sedative agents

The estimated percentage of patients who received anxiolytic-sedative agents preoperatively was 46.8% (36.7) for in-patients and 30.4% (35.3) for day care patients ($P < .0001$). In 86.1% of hospitals, it was considered mandatory for a nurse instead of a patient transport technician to accompany the patient from the ward to the holding area if the patient had received anxiolytic-sedative agents. [Table](#) lists the agents used, route of administration, mean dose,

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