

Literature review

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Economic impact of anaesthesia decision making: they pay the money, we make the choice

Bernard V Wetchler

J Clin Anesth 1992; 4, No. 5 (suppl I): 20S–24S

This paper stated that cost must enter into quality-of-care decision making for physicians and other health care providers. However, anaesthesiologists should not allow cost to be the overriding factor in determining the choice of an anaesthetic drug or a particular technique. The choice of anaesthetic drugs might affect the patient in both the operating room (OR) and the postanesthesia care unit (PACU) and how rapidly the patient could return to normal activities at home and in the workplace.

The author indicated that three criteria of assessment should be applied to any new anaesthetic:

- (1) Is the new agent sufficiently better than currently available anaesthetics?
- (2) Are there added costs associated with the use of the new anaesthetic?
- (3) Are there potential cost savings that could result from decreased patient morbidity, and duration of PACU stay by using the new drug?

Dr Wetchler suggested that we should think in terms of both direct and indirect costs. Direct costs included not only the cost of the anaesthetic but the additional cost of adjuvants, equipment, and drug waste. Indirect costs took into consideration the OR turnover time between cases – how quickly and safely the patient could be moved from the OR to the PACU; length of stay in the PACU; intensity of PACU care needed; and equipment maintenance. For ambulatory surgery patients, anaesthesia-related unanticipated hospitalization should be considered as an indirect expense. Patient satisfaction should also be taken into account. To achieve savings, PACU discharge must be geared to scoring systems for discharge criteria rather than designated time spent in the recovery area. The conclusion was that cost-effective quality care should be provided, and that each anaesthesiologist must give thought to becoming prudent providers.

Comments

New anaesthetic drugs in induction agents, inhalational anaesthetics, neuromuscular relaxants and local anaesthetics are available. They are generally more costly than the existing available anaesthetic drugs. This article addresses the timely issue of cost-effective quality care in outpatients, and asks us to

examine the role of each new anaesthetic drug in the practice of anaesthesia. New anaesthetics must offer unique and important benefits to patients, to anaesthesiologists and to the health care system in order to warrant wide-spread incorporation into clinical practice.

FC

Comparative effect of ketorolac, dezocine and fentanyl as adjuvants during outpatient anaesthesia

Yifeng Ding, Paul F White

Anesthesia & Analgesia 1992; 75: 566–71

Ketorolac, a non-steroidal, anti-inflammatory drug that inhibits prostaglandin synthesis, is alleged to have comparable analgesic efficacy to morphine when administered for postoperative pain relief. Dezocine is a partial μ -receptor agonist that is slightly more potent than morphine when used for postoperative pain relief. In this study, the comparative effects of ketorolac, dezocine, and fentanyl were evaluated in 136 healthy female patients undergoing outpatient laparoscopy procedures. Patients received ketorolac (60 mg) or dezocine (6 mg) or fentanyl (100 μ g) before the start of the operation.

In the postanesthesia care unit, 61% of patients in the fentanyl group received analgesic drugs for persistent pain, compared with 34% and 25% in the ketorolac and dezocine groups, respectively. Similarly less postoperative fentanyl was required in the ketorolac and dezocine groups, compared with the fentanyl group. However, 52% of the patients receiving dezocine required anti-nausea therapy compared with 20% and 18% in the fentanyl and ketorolac groups, respectively. Recovery times were significantly shorter in the ketorolac group. The authors concluded that both ketorolac and dezocine were effective alternatives to fentanyl. However, dezocine was associated with an increased incidence of postoperative nausea and a delayed discharge time compared with ketorolac.

Comments

The results of this study suggest that ketorolac will be a useful intraoperative analgesic. Patients have less postoperative pain, require less postoperative analgesics, and have more rapid recovery. Dezocine seems to be less suitable as it is associated with an increased incidence of postoperative nausea. These findings suggest that ketorolac should be part of the armamentarium of anaesthesiologists.

FC

Efficacy of preadmission testing in ambulatory surgical patients

R Golub, R Cantu, JJ Sorrento, HD Stein

Am J Surg 1992; **163**(6): 565–70; discussion 571

A retrospective study was done with 325 patients who had preadmission testing prior to ambulatory surgery. At least one laboratory abnormality was noted in 84% of the patients. The serial multiple analysis (SMA)-7 was abnormal 63% of the time. Abnormalities were seen in 54% of the SMA-12 panels and 38% of the urinalyses performed. Twenty four per cent of the patients treated had an abnormal electrocardiogram (ECG). An abnormal chest roentgenogram was found in 19% of the patients. Only three (1%) patients potentially benefited from preadmission testing. Ninety-six per cent of the abnormal laboratory results were ignored by the attending physicians. Therefore, we conclude that preadmission testing should be done on a selective basis. Patients older than 50 years of age should have an ECG. A haematocrit should be obtained only if major blood loss is anticipated. All other tests should be ordered based on the history and physical examination.

Comments

Patients eligible for ambulatory surgery usually have ASA 1 or 2 classification. For ASA 1 and 2 patients very little preadmission testing is necessary. This has been found before for in-hospital patients. The paper is important in demonstrating that no other policy is necessary in ambulatory surgery. It will help surgeons and anaesthetists to limit 'defensive' tests. One of the major reasons to support ambulatory surgery is cost reduction in health care. This paper promotes even more cuts in expenditure.

PG

Intra-articular morphine, bupivacaine, and morphine/bupivacaine for pain control after knee videoarthroscopy

George F Khoury, Andrew CN Chen, Douglas E Garland, Christoph Stein

Anesthesiology 1992; **77**: 263–6

Opioid analgesia has been associated with activation of opioid receptors within the central nervous system. Evidence has also accumulated that exogenous as well as endogenous opioids can produce pronounced anti-nociceptive effects by interacting with opioid receptors in peripheral tissues. Thus low doses of intra-articular morphine, injected at the completion of arthroscopic knee surgery, can produce relatively long-lasting postoperative analgesia apparently via activation of local opioid receptors in the knee joint. The authors studied 33 patients who received either morphine (1 mg 20 ml⁻¹ NaCl $n = 11$), bupivacaine (20 ml 0.25%; $n = 11$), or a combination of the two ($n = 11$) intra-articularly at the completion of the surgery. After 1, 2, 3, and 4 h and at the end of the first and second postoperative days, pain was assessed by a visual analogue scale, and supplemental analgesic requirements were recorded.

Pain scores were significantly greater in the morphine group than in the other two groups at 1 h. There were no significant

differences at 2 and 3 h. From 4 h until the end of the study period, pain scores were significantly greater in the bupivacaine group than in the other two groups. Analgesic requirements were significantly greater in the morphine group than in the other groups at 1 h but more significantly greater in the bupivacaine group than in the other groups throughout the remainder of the study period. The authors showed that in patients having undergone arthroscopic surgery, intra-articular bupivacaine yields postoperative analgesia of immediate onset but only of short duration (2–3 h), whereas intra-articular morphine produces an analgesic effect of delayed onset, about 2 h post injection, but of remarkably long duration. The combination of these two drugs results in satisfactory analgesia throughout the entire observation period.

Comments

Postoperative pain is one of the most common complaints in ambulatory surgery. Persistent pain is also one of the causes of unanticipated admission. This exciting clinical study demonstrated the effectiveness of intra-articular morphine in inhibiting postoperative pain by activation of peripheral opioid receptors within the joint. Thus the practical application of the combination of intra-articular morphine and bupivacaine will enable more complicated joint surgery to be done on an outpatient basis.

FC

Outpatient open cholecystectomy

EC Saltzstein, LC Mercer, JB Peacock, SH Dougherty

Surg Gynecol Obstet 1992; **174**(3): 173–5

A prospective study to evaluate discharge of patients from the hospital the day of open cholecystectomy was performed. Patients were selected for outpatient operation if they were less than 55 years of age, did not undergo exploration of the common bile duct and had no significant co-morbidity. During a six month period, 94 consecutive patients underwent cholecystectomy. Forty-four of 64 eligible patients were discharged on the day of operation. Patients were walking and receiving oral liquids soon after operation. Marcaine (bupivacaine hydrochloride) was injected subfascially in all patients and vertical incisions were used in 34 of 44. One patient required readmission for 12 hours, three days after operation. The satisfaction rate was high and the patients returned to their usual activity in seven to 21 days. Outpatient open cholecystectomy is safe, and appropriate therapy and the data established a standard with which to compare that of laparoscopic cholecystectomy.

Comments

Many papers on laparoscopic cholecystectomy claim that the laparoscopic procedure reduces the operative morbidity so much that this procedure can be done as an outpatient procedure. A laparoscopy is less traumatizing than a laparotomy. Saltzstein et al. shows that in selected patients the open cholecystectomy can be performed safely as an outpatient procedure. Surgeons had never thought of doing this in the era before laparoscopic cholecystectomy. This paper should not advocate an outpatient procedure for open cholecystectomy, but emphasize that more factors exist than laparoscopy alone leading to early patient discharge from the hospital. This

includes a different attitude towards outpatient procedures. Surgeons, anaesthetists, nursing staff and patients have to adjust so that more procedures can be done safely as outpatient procedures or ambulatory surgery than traditionally was believed or assumed possible.

PG

Outpatient surgery: Why? How?

(Original title: La chirurgie ambulatoire. Pourquoi? Comment?)

LF Hollender

Bull Acad Natl Med 1991 **175**(7): 995-1001

One-day surgery -- defined by the fact that the patient enters the clinic in the morning and returns home late in the afternoon -- requires the observation of a whole range of criteria which are absolutely necessary to guarantee the highest possible security. At first an outstanding collaboration with the anaesthetist is mandatory. Material conditions of its practice should not be neglected. Rooms and medical staff have to be appropriate. Indications of its performance are large but depend on the

experience of the surgeon. Limits are ruled by the general status of the patient and also by his social conditions and his surroundings, not forgetting excellent collaboration with the general practitioner. Economic advantages seem obvious but have to be calculated. It is above all necessary to persuade the public hospital administrations and the social security structures, of the interest and the advantages of one-day surgery.

Comments

Most reports on ambulatory surgery originate from authors familiar with the English literature. This paper shows that ambulatory surgery has gained interest in France as well. The abstract starts with a clear definition of one-day surgery. This is important, because one-day surgery might vary from removal of a sebaceous cyst to a laparoscopic cholecystectomy, where the patient is discharged from the hospital within 24 hours after the procedure. It is obvious that these definitions influence the percentage of procedures that can be done in ambulatory surgery. Hospital administrators and health insurance companies tend to base their calculations on these percentages. In addition, the abstract summarizes the core elements for initiating successful ambulatory surgery.

PG

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