

Unplanned admissions in day surgery

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Abstract

The incidence of and reasons for unexpected admissions from day-surgery wards to in patient wards over a three month period in the Wessex region were assessed. The multi-centre study included ten hospitals in which 11,749 procedures were performed and 258 patients admitted, giving an admission rate of 2.25%. Pain, post operative nausea and vomiting, and delayed recovery were found to be the most significant anaesthetically related factors responsible for those admissions. Copyright © 1996 Elsevier Science B.V.

Keywords: Daycase surgery; Admissions

1. Introduction

In 1993 the main conclusion of the British NHS Task Force Report on Day Surgery was that day surgery represented the best care option for 50% of all elective surgical procedures, and that this target should be reached by the year 2000 [1]. The number of day operations in the UK is now greater than 2 million per year. The potential benefits of day surgery are numerous, but these may be undermined by excessive unplanned admissions to the general wards [2]. Acceptance of day surgery by patients and hospital personnel could then be affected, and the expansion of day surgery could be delayed. We therefore undertook an audit to assess the incidence and reasons for unplanned admissions from day case units to the general wards in the Wessex region.

2. Methods

Questionnaires were sent out to 10 hospitals in the Wessex region requesting the exact number of procedures done over the three month period May, June and July 1995, the number of admissions to the general

wards over the same period, and the reasons for those admissions. The hospitals included in the study are shown in Table 1. (The order of the hospitals have been altered to preserve anonymity).

3. Results

All patients were either ASA class 1 or 2. There were a total of 11,749 procedures done in the 10 selected hospitals over the three month period (Fig. 1) 258 patients were admitted to an inpatient ward (Fig. 2), giving an average admission rate of 2.25%. Admission rates varied between hospitals from 0.72% to 3.74% over the three month period (Fig. 3). The reasons for these admissions could be grouped into 9 different categories, as shown in Table 2.

Category A, B and C are self-explanatory. Surgical complications (D) included haemorrhage and the necessity to leave packs and drains in situ and one case of urinary retention which required catheterization. Category E included reasons such as a patient who underwent a diagnostic laparoscopy for lower abdominal pain and was then found to have an ectopic pregnancy. It also included an admission of an arthroscopy patient who required more extensive surgery than anticipated. One ophthalmology patient was admitted post trabeculectomy; a gynaecology patient underwent a mini-

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Table 1
Hospitals from the Wessex region participating in the study

Royal Boumemouth	Winchester
Salisbury	North Hampshire. Basingstoke
Southampton	Swindon
St. Mary's - Newport	West Dorset - Weymouth
Portsmouth (Queen Alexandra)	Poole

laparotomy and could not be discharged the same day. Anaesthetic complications (F) included anaphylaxis, aspiration pneumonia, suxamethonium apnoea and a high block secondary to an epidural. Medical complications (G) included headache, epilepsy, angina, an abnormal ECG during surgery, and other medical complications which were not elaborated upon by the relevant hospitals. Some social reasons (H) were specified as living alone or insufficient home support. The admission rate for social reasons is slightly inflated since patients in some of the hospitals were admitted electively because of inadequate home support. The category 'Others' (I), included episodes of fainting and hypothermia. Idiosyncratic usage of the day surgery unit as the primary gynaecological referral area in some hospitals led to the discounting of some patients from these hospitals.

4. Discussion

The incidence of minor morbidity does not appear to have changed much over the last 25 years in spite of very significant improvements in anaesthesia and general surgery [2]. The admission rate at any particular hospital had no correlation with the number of procedures that were done at that particular hospital (Figs. 1 and 2). Dedicated day - case unit centres tend to have very low unexpected admission rates (<1%) whereas hospital - based centres tend to be slightly higher (1 to 9.5%) [3,5]. Our average regional admission rate of 2.25% compares favourably with these latter figures (Fig. 3). The commonest reasons quoted for unexpected admissions in other studies are slow recovery, nausea

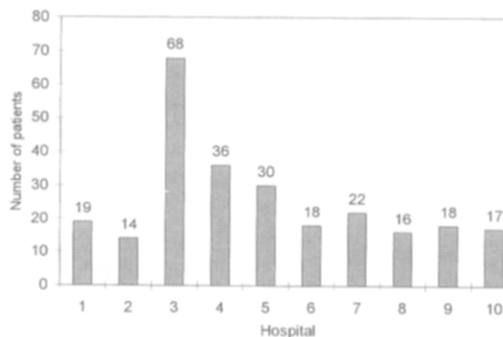


Fig. 2. Total number of admissions per Hospital.

and vomiting, dizziness or fainting, surgical complications and pain [3-5]. This is supported by our study (Fig. 4). Delayed recovery has decreased significantly since the introduction of propofol but still occurs, presumably due to patient variability, the use of other drugs, as well as junior surgical and anaesthetic expertise. It has been suggested that a factor contributing to unexpected admissions may be the involvement of less experienced junior anaesthetists, but this was not found in our study.

Decreased incidence of dizziness is associated with the use of metoclopramide, the mechanism of which is unknown [8]. An additional advantage of metoclopramide is its effect of reducing gastric fluid volume and hence decreasing the risk associated with vomiting and aspiration [11]. Of patients admitted, Kong et al quoted an incidence of just over 11% due to nausea and vomiting [5]. This is comparable to our regional results of 13.5%. (Fig. 4). It has been found that a significant proportion of patients who are admitted with nausea and vomiting and required admission had an opiate. This overnight admission rate was four times greater than those who did not receive any opiate [9].

The use of non-steroidal anti-inflammatory drugs (NSAID's) results in a reduction of nausea and vomiting, probably due to decrease in pain levels and decreased opiate use. Many of our patients are given ondansetron prophylactically and yet the incidence of nausea and vomiting is unchanged. Alon et al. [10]

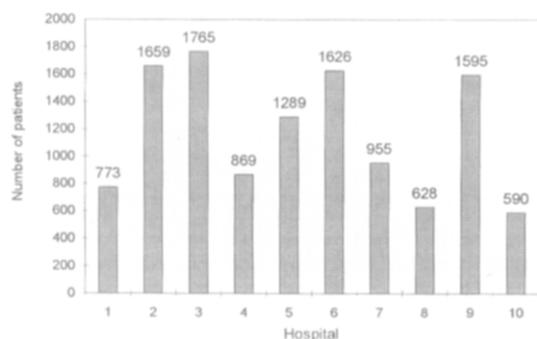


Fig. 1. Total number of procedures per Hospital.

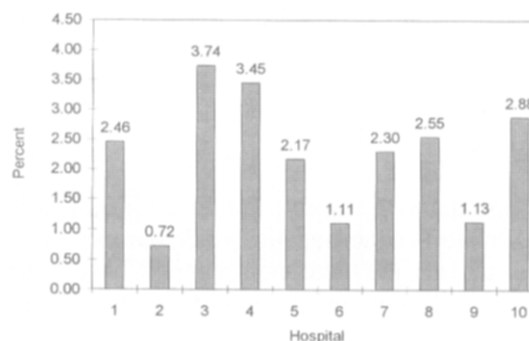


Fig. 3. Percentage unexpected admissions per Hospital.

Table 2
Reasons for admissions, including percentages

A	Pain	11.63%
B	Post-op nausea and vomiting	13.57%
C	Delayed recovery	14.34%
D	Surgical complications	17.83%
E	Unsuitable case/Extensive surgery	13.95%
F	Anaesthetic complications	3.10%
G	Medical complications	11.24%
H	Social reasons	10.85%
I	Other	3.49%

found that the incidence of postoperative vomiting was significantly less after prophylactic ondansetron than after prophylactic metoclopramide or droperidol [10]. Their results also showed that the incidence of emesis, but not nausea, was significantly decreased in the ondansetron group compared to the other two commonly used anti-emetics. This has been supported by a number of other studies.

In our study surgical complications make up the single most important reason for admission and pure anaesthetic complications the least. This is exactly opposite to the reasons for admission reported by Johnson and Jarrett in 1990, but is supported by other studies [4,5,7]. In 1991 the data of Thompson et al. [7] showed that surgical complications were the single most common reason for admission, as in the present study, although our incidence was significantly less. Thompson et al. did include pain as a surgical complication but even when this was removed and included as an anaesthetic complication the result was still significantly higher than ours. Presumably this reflects improvements in anaesthetic care and the increased use of regional blocks, although there are many other factors that may have affected this result.

Pain is a significant factor contributing to inpatient admission. Many clinical papers give support to the effectiveness of pre-emptive analgesia [12,13]. However, recent work comparing analgesic interventions before and after surgical stimuli have shown equivocal results. Local anaesthetics blocks appear to exert a true pre-emptive effect which may be augmented by regional block [13]. The use of NSAID's reduce the need for opiates, particularly if started prior to the onset of surgical stimuli [14]. Most of our day surgical units use NSAID drugs and give bupivacaine during the surgical procedure. The exact incidence of the simultaneous use of these two drugs in the region is not known at present.

Pre-existing medical conditions have previously been found to place patients at increased risk of poorer intra-operative and post-operative outcome [6]. This relationship was found even when the medical condition was thought to be under control [6,15].

Occasionally patients will need to be admitted post-operatively for medical reasons which had not been

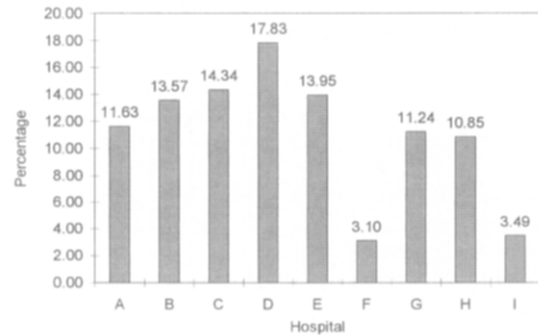


Fig. 4. Percentage admissions per Category (see Table 2 for explanation of categories).

disclosed by the patient pre-operatively, for fear of cancellation of surgery. This occurred with one patient in our study and this factor will be unavoidable until every patient is assessed pre-operatively.

In summary, this large multi-centre study shows that minor morbidity will always lead to unexpected admissions to inpatient wards. The admission rate does not appear to have changed over the last few years in spite of improvements in techniques and technology. One possible factor contributing to this is that patients who were previously not considered medically fit for day-case surgery are now being subjected to day case operations because the technology of surgery and anaesthesia has improved. This may effectively cancel out any advantages that the new technology may be providing. Surgical complications and unexpectedly extensive surgery continue to be a significant cause of admissions. Continued research aimed at identifying the optimum anaesthetic technique to decrease the incidence of delayed recovery, as well as the optimum pain control methods used in each surgical procedures must continue. The use of local analgesia should be encouraged. Long-acting opiates should be avoided. Propofol and alfentanil are probably the anaesthetics of choice. The optimum anti-emetic prophylaxis will need to be further researched and assessed.

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