

## THE PHARMA INNOVATION

# Study on outcomes of day care surgery and its acceptance

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**Introduction:** Day surgery is defined as admission and discharge of patients for specific procedure within 12 hour working day. When a patient requires an overnight admission the term 23-hour stay should be used. (1) As per recent studies, day care surgeries play a significant part in the health-care industry. The rise in outpatient treatments, often known as day care surgeries, is partly due to progress in medical technology and changes in the financing method, which have made day care surgeries more appealing in recent years. In India, day care surgeries are still at a budding stage. In India, the current trend is to establish Super-Specialty Tertiary health care facilities.

### Aims and Objectives

**Aim:** To observe the outcomes of day care surgery and to analyze the patients' satisfaction and acceptance in regard to day care surgeries.

### The objectives of the study are

- To analyze the outcomes of day care surgery.
- To analyze the patients' view on the process and its acceptance

**Materials and Methods:** This study was prospectively conducted in the Department of General Surgery at a tertiary care teaching hospital, Over the course of two years, 584 procedures were performed at the Department of General Surgery. Out of these only 88 patients were eligible based on inclusion criteria. A day care surgery is defined as a procedure in which the patients undergo elective operation on the day of their admission and are discharged within 24 hours of surgery.

**Results:** A total of 584 surgeries were done in the department of general surgery from the period of two years out of which 88 patients were satisfying the inclusion criteria. In the study 35(39.77%) were male patients and 53 (60.23%) were female patients. The age range of the patients in this study was between 18-72 years with the mean age being  $45.841 \pm 15.918$  years. The age distribution was divided into 3-23.9% patients were between the age of 18-34 years, 37.5% patients were between the age of 35-54 years and 38.6% patients were of age >55 years.

**Conclusion:** Only 15.06% of day care procedures were conducted in the surgical department throughout the two-year study period. In comparison to studies conducted in Europe and the United States, our performance is poor. This study concludes that day-care procedures may be conducted in India with very minimal morbidity and no mortality. Day surgeries play an important part in the health-care system now, and they will continue to play an important role in the future. A day care surgery places different demands on various skills of each specialty (surgical and non- surgical) involved and especially requires special effort in anaesthesia and nursing care <sup>[2, 3, 4, 5, 6]</sup>.

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**Keyword:** Post-operative day (POD), hospital acquired infections (HAI), chronic obstructive pulmonary disease (COPD), general anaesthesia (GA), post-operative nausea and vomiting (PONV), out patient (OP)

**INTRODUCTION:** In India, day care surgeries are still at a budding stage. In India, the current trend is to establish Super-Specialty Tertiary health care facilities. Establishing day care centres has not picked up priority yet. Due to lack

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of facilities and infrastructure as well as shortage of doctors and nursing staff in the public sector, there has always been a growing trend to seek treatment in private hospitals and clinics (4).

The growing burden on providing health care to the public necessitates the priority establishment and taking up of day care surgeries when possible.

Outpatient surgery and anaesthesia, which began as a cost-cutting measure, has gained traction in India over the last decade as a result of developments in surgeries and anaesthesia [4].

Elective surgical treatments can be done with ease in selected patients, and the patient can return home the same day. This saves the waiting time and finances of the patients and a quicker return to home environment. It also decreases the burden on tertiary hospitals [3, 7-8].

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The objectives of the study are:

- To analyze the outcomes of day care surgery.
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**Materials and Methods**

This study was prospectively conducted in the Department of General Surgery at a tertiary care

teaching hospital over a period of 1 year, 584 procedures were performed. Out of these only 88 patients were eligible based on inclusion criteria. All the patients' medical histories, types of procedures performed, and length of stay were gathered, and they were followed up on the 3rd and 7th post-operative days.

A day care surgery is defined as a procedure in which the patients undergo elective operation on the day of their admission and are discharged within 24 hours of surgery.

**Inclusion criteria**

1. Age more than 1 year and less than 75 years.
2. Medically fit and stable patient
3. Well-motivated and psychological state.
4. Ability to eat-drink within reasonable time scale.
5. Availability of transport, mode of communication and responsible relative at home.
6. Patients who fulfill the condition of day care surgery and shall follow up on day3 and day 7

**Exclusion Criteria**

Patients who were in the hospital for more than 24 hours or who had insufficient follow-up data were omitted from the study. And patients who did not provide consent.

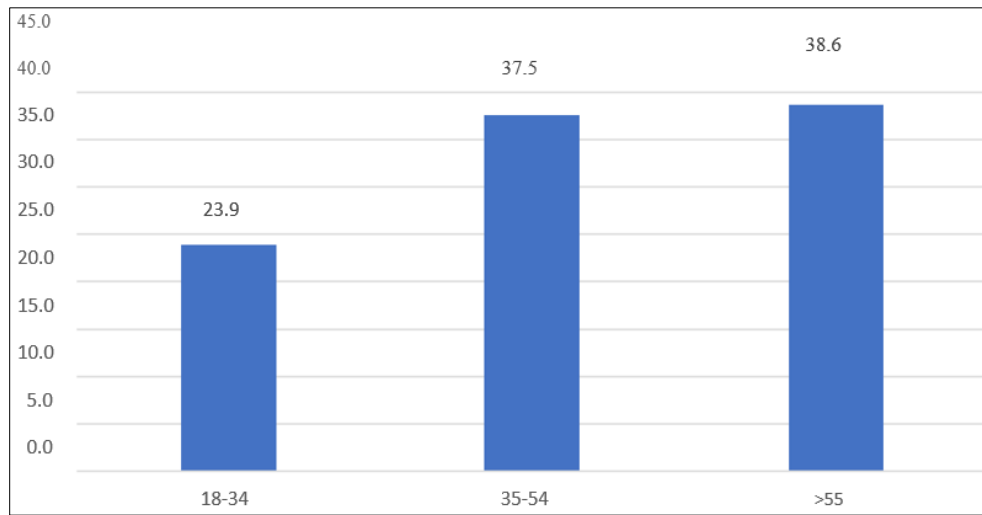
**Results**

A total of 584 surgeries were done in the department of general surgery at a tertiary care teaching hospital over a period of 1 year out of which 88 patients were satisfying the inclusion criteria.

All patients were given the option of a day surgery or inpatient treatment. In the study 35 (39.77%) were male patients and 53 (60.23%) were female patients. The age range of the patients in this study was between 18-72 years with the mean age being 45.841 ±15.918 years (Table 1).

**Table 1:** Baseline Characteristics

Parameters	Numbers (N=88)
<b>Age(in years)</b>	
Mean age	45.841 ± 15.918
Age range	18-72
<b>Gender</b>	
Men	35(39.77%)
Women	53(60.23%)
<b>Time of discharge (in hours)</b>	
Mean time of Discharge	8.05 ± 2.62
Range for the Time of discharge	5-14



**Fig 1:** Age Distribution

The age distribution was divided into 3- 23.9% patients were between the age of 18-34 years, 37.5% patients were between the age of 35-54 years and 38.6% patients were of age >55 years. (Fig 1)

**Table 2:** Patient’s Experience before Surgery

Criteria	Satisfactory	Not satisfactory
Information on Surgery and the Protocol given	81(92.0%)	7(8.0%)
Privacy given	84(95.5%)	4(4.5%)
Waiting time	Within expected Time (satisfactory)	Longer than Expected time (not Satisfactory)
	73(83.0%)	15(17.0%)

The amount of privacy experienced by the patient had a direct bearing upon their satisfaction, where 84(95.5%) patients were satisfied with the privacy experienced throughout and 4 (4.5%) patients have experienced less than acceptable privacy (Table 2). Patients stressed about waiting

times, and those who believed they had been kept waiting longer than anticipated were less satisfied [15 (17%)] and those who felt the waiting time was as expected were more satisfied [73 (83%)]. (Table 2)

**Table 3:** Patient’s Experience after Surgery

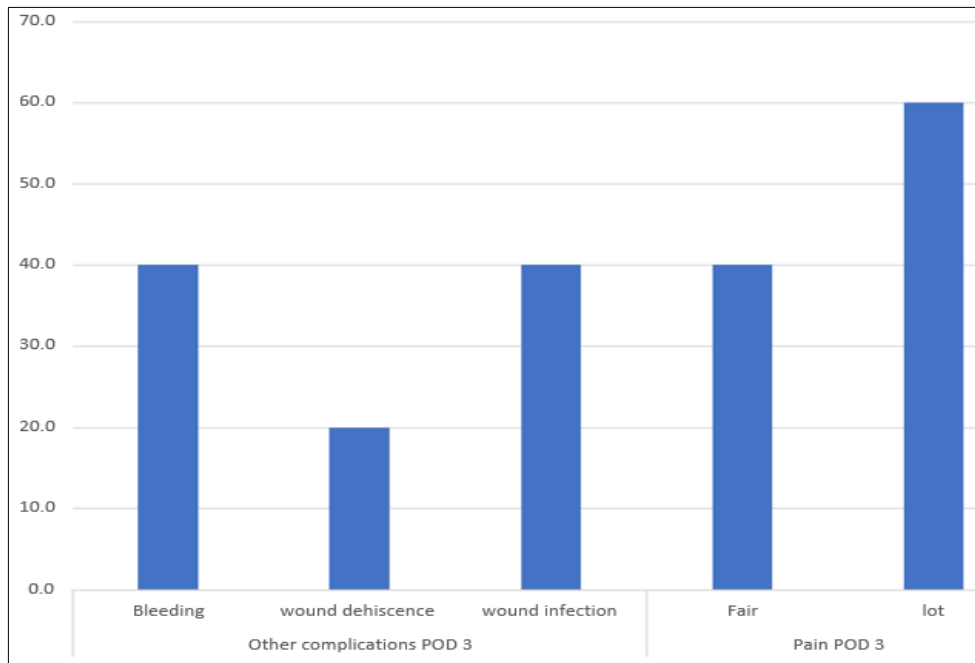
	<b>Satisfactory</b>	<b>Not satisfactory</b>
Discharge advice	82(93.2%)	6(6.8%)
Post-operative	82(93.2%)	6(6.8%)
Follow up		
Feeling	No	Yes
Physically sick	74(84.1%)	14(15.9%)
Mean recovery (in days)	3.61 ± 1.67	
Preference for Staying in Hospital Overnight	No	Yes
	73(83.0%)	15(17.0%)
Adverse events Occurred	Pod 3- 27	Pod 7- 1

**Table 4:** Postoperative Nausea and Vomiting

<b>Postoperative</b>	<b>Pod 0</b>		<b>Pod 3</b>	
Nausea and vomiting				
	Yes	No	Yes	No
	17	71	0	88(100%)
	(19.3%)	(80.7%)	(0%)	

Postoperative nausea and vomiting was at the time of discharge where 17 (19.3%) patients had postoperative nausea and vomiting on postoperative day 0 (at the time of discharge),

and 71 (80.7%) patients had no complaints of nausea and vomiting postoperatively. On follow up on postoperative day 3 none of the patients had nausea and vomiting complaints. (Table 4)



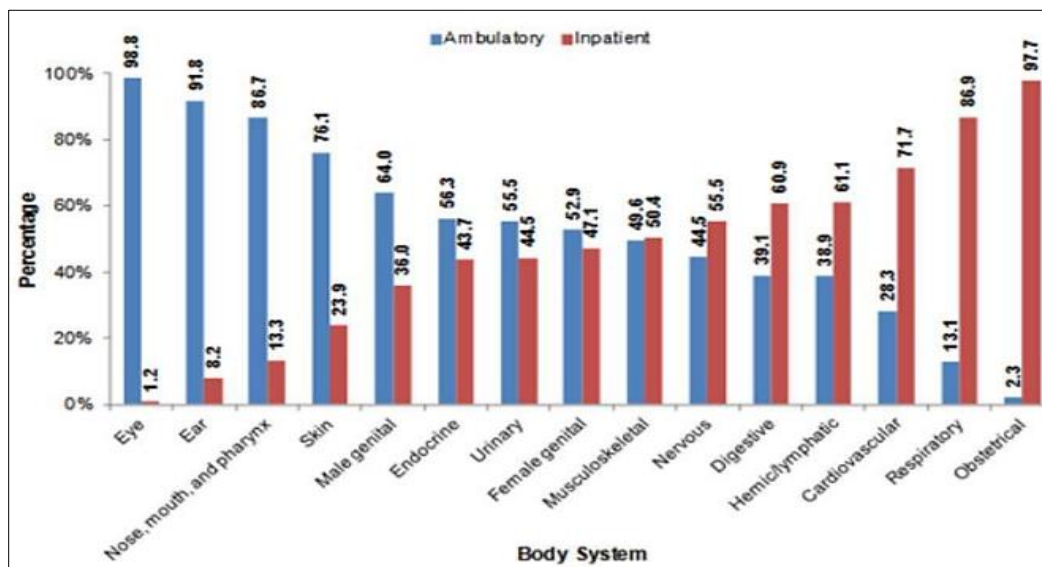
**Fig 2:** Readmissions Based On Complications

Out of 5 patients readmitted on Postoperative day 3, 2 had bleeding from surgical site, 2 had wound infection and 1 had wound dehiscence requiring intervention. Among these 5 patients, 2 patients had ‘fair amount of pain’ and 3 patients had ‘lot of pain’. (Fig. 2).

**Discussion**

This study shows that the patients were largely satisfied with the care they received, irrespective

of the type of surgery. When it comes to fairly minor operational procedures, satisfaction scores are difficult to assess. With a rigorous selection process, it would be surprising if the vast majority of patients did not have positive outcomes. Almost all assessments reveal that only a few patients have voiced dissatisfaction with their care, with minimum 80% of respondents indicating satisfaction for every given question [9].



**Fig 3: Body System**

Only 15.06% (88 out of 584) of the patients have been included in the study in the department of general surgery in our hospital. In comparison to studies conducted in Europe and the United States, our performance is lower (fig 3). The main exclusion criteria were not able to obtain consent for day care surgeries due to the stigma of the patients, to stay in the hospital post-surgery. One of the main reasons for not consenting was to obtain professional care immediately after surgery or the inability of the patients' attendees to provide quality care, other reason being patient being too far from the institution and would avoid travel immediately postoperatively. This is in contrast to western countries where more than half of the surgeries are being performed on day care basis. Day care surgeries account for fewer than 15% of all surgical specialties in India. (9). Carey *et al.* noted In his research, he looked at the rise of day care surgeries, which are similar to "targeted factories" that specialise in treating specific ailments with a specific line of service [10].

Fig 3, Comparison of surgeries by body system in hospital-owned ambulatory versus inpatient settings (adapted from Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Pro-Project (HCUP), State Ambulatory Surgery and Services Databases (SASD) and State Inpatient Databases (SID), 2012, from 28 States) The acceptance rates by the patients were based on preoperative and post-operative experiences and the adverse events occurred. Waiting time, information given, and privacy given played a major role in preparing the patient mentally to the protocol of day care surgery. Patients desired instructions on how to deal safely with the tissue stress induced by surgery, as well as an estimate of how long it would take them to recuperate from their procedure [11, 12].

Postoperative experiences such as discharge advice, time of discharge, follow ups and recovery time were important factors where the major importance has to be given to discharge advice. Proper warnings and adequate

management counselling prepared the patient and their care givers to prepare in case of adverse events. Providing satisfactory discharge advice had an impact on patients' satisfaction [12, 13].

Mean time of discharge in our study was  $8.05 \pm 2.62$  hours with discharge time ranging between 5 – 14 hours.

In a study conducted by A. Lingaiah *et al.*, The average length of stay in the hospital was  $20.5 \pm 2.4$  hours, with a range of 8.5-23 hours [7].

A study conducted by Pota *et al.* noted 5-15 hours (13).

A study conducted by Lingaiah *et al.* calculated 6.4% patients had complications by postoperative day 7 [1].

A study conducted by Ramyil *et al.*, showed early post-operative complications occurred in 2 of the 61 day care surgeries [14].

PONV is the most unpleasant experience for a patient undergoing anaesthesia and surgery. It is a common sequel of general anaesthesia and unanticipated hospital admission after day care surgery [15].

**Conclusions**

Only 15.06% of day care procedures were conducted in the surgical department throughout the two-year study period. In comparison to studies conducted in Europe and the United States, our performance is poor. This study concludes that day-care procedures may be conducted in India with very minimal morbidity and no mortality. Day surgeries play an important part in the health-care system now, and they will continue to play an important role in the future. A day care surgery places different demands on various skills of each specialty (surgical and non-surgical) involved and especially requires special effort in anaesthesia and nursing care [2, 3, 4, 5, 6].

The disadvantage of day care procedures is that they can only be conducted on a limited number of cases, the majority of which are elective rather than emergency. As with planned procedures, it is necessary for the patient or the patient's relatives to be apprised of the surgery or treatment, as well as the care required at home during the first 24 to

48 hours after surgery, particularly in children and the elderly <sup>[12, 16-17]</sup>.

India is a vast country with limited health-care resources serving a massive population. More devoted day care centres are needed immediately to deal with the growing patient load. In the Indian subcontinent, there is also a need to increase patient and health-care provider awareness campaigns. Despite excellent patient satisfaction, more effective ways of communication between the patient and day surgery units concerning waiting periods, pain treatment, and potential difficulties after discharge should be considered <sup>[18, 10, 19-20]</sup>.

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