

Incidence of Various Comorbidities among Patients Coming for Pre-Anesthetic Checkup in a Secondary Health Care Hospital

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ABSTRACT

Pre-anesthesia checkup (PAC) forms an integral part for every patient undergoing surgery. It is a valuable tool in decreasing the perioperative risk to the patient by preoperative intervention, reducing number of investigations and consultations and reducing perioperative morbidity and mortality. Patients consultation for the surgery is their first contact with the healthcare provider. So we undertook this study to detect the comorbid conditions among patients coming for preanaesthetic evaluation in developing countries have poor access to the healthcare system and it is quite often that in a secondary care hospital. A total of 110 patients were studied over a period of 10 months. Total of 31 patients (28%) had 48 medical conditions requiring further workup. Out of these 48 medical conditions, 29 (60.4 %) were known cases of medical comorbidities, whereas 19 (39.5%) were newly diagnosed at the time of PAC. Most common comorbidities were anemia and hypertension. We conclude that PAC helps in detecting previously unknown comorbidities and thus impacts perioperative management.

Keywords: PAC, comorbid conditions, hypertension, perioperative management

INTRODUCTION

Pre -anesthesia checkup (PAC) forms an integral part for every patient undergoing surgery. PAC has been defined as the process of detailed history taking, physical examination and necessary

investigations, which precedes the delivery of anesthesia. [1] Pre-anesthetic evaluation is quite helpful in detection of comorbid diseases and their effect on the patient. [2] It is a valuable tool in decreasing the perioperative risk to the patient by preoperative intervention, reducing number of investigations and consultations, decreasing the number of cases cancelled, shortening the length of hospital stay, cutting down the surgical complications, and reducing perioperative morbidity and mortality. [3-7]

PAC also offers a chance to the anesthesiologist in forming a bond with the patients, which helps in reducing the anxiety and fears of the patients. Preanaesthetic clinics have become an integral part of perioperative care and various studies from different parts of world have shown its importance and advantage in improving patient care. [2,5,8,9]

In developed countries, the healthcare system is very efficient. Patients in developed countries seek medical consultation more often. But on the opposite side, patients in developing countries like India, have poor access to the healthcare system. The education level, awareness and record keeping of pre-existing diseases is also poor in Indian population. In that scenario, it is quite often that consultation for the surgery is their first contact with the healthcare provider. So we expect our

patients to present with comorbidities which have not been detected. So we undertook this study to detect the comorbid conditions among patients coming for preanaesthetic evaluation in a secondary care hospital.

MATERIAL AND METHODS

After approval by the research ethics committee and written informed consent of patients, this prospective observational study was carried out in all the patients of either sex, coming for various surgeries in the pre-anesthesia clinic at Civil Hospital Nurgpur which is a secondary health care institution. The study was conducted from August 2019 to May 2020. 110 patients were studied over the period of 10 months.

In pre-anesthetic checkup, we noted the demographic characteristics (age, sex etc.) weight, height, diagnosis, surgery, history of diabetes, jaundice, shortness of breath, chest pain, allergy, hypertension, thyroid disorder, or any other co morbid condition. We also enquired about smoking and alcohol intake by the patient. Detailed general physical and systemic examination was performed. Lab investigations namely, complete hemogram and random blood sugar were ordered in every patient. ECG and chest X- ray (CXR) were done in every patient > 18 year age, except in pregnant patients where CXR was avoided. Other investigations were done according to the comorbid condition or surgical condition. Patients were thoroughly screened for all the comorbid conditions. The comorbid conditions were classified as pre-existing or newly diagnosed at the time of the visit to the PAC.

Hypertension was diagnosed according to the Joint National Committee 8 criteria. [10] Diabetes was diagnosed according to the American Diabetes Association 2011 criteria. [11] In our region patients are more commonly found with anemia. Therefore in this study, WHO guidelines for anemia were considered, where severe anemia is defined as haemoglobin level less than 7 g/dl. [12]

The data was tabulated and SPSS 14.0 statistical software was used for analysis.

RESULTS

The present study was a prospective observational study conducted at secondary health care institution. A total of 110 patients were evaluated. In our study, 58.0 % of patients were female while remaining 46.0 % patients were male belonging to different age groups (ranging from 3years to 85 years).

Table 1: Demographic data

AGE (years)	MALE	FEMALE	Total cases
< 19	6	8	14 (13%)
19- 60	28	46	74 (67%)
>60	12	10	22 (20%)
Total	46 (42%)	64 (58%)	110

Total of 31 patients (28%) had 48 medical conditions requiring further workup. Out of these, 29 (60.4 %) were known cases of medical comorbidities, whereas 19 (39.5%) were newly diagnosed at the time of PAC. Out of 110 patients, 68 (61.8%) patients were in ASA I whereas 36 (32.8%) in ASA II and 6 (5.4%) were in ASA III.

Anemia was detected in 65% patients. But severe anemia was present in only 4 patients. The most common abnormality detected was hypertension. Endocrine disorders were reported in 15 patients, out of which 8 had diabetes and 7 had hypothyroidism. Respiratory disorders were detected in 10 patients. 8 had COPD and 2 had asthma. Among these 31 patients, 17 had only one comorbid condition, 12 had two comorbid conditions and 2 had three comorbid conditions.

Table 2: Comorbid conditions present or detected during pre-anaesthesia evaluations

Comorbidity	OLD	NEW	TOTAL
Hypertension	12(25%)	8(17%)	20(42%)
Endocrine	8(17%)	7(14.5%)	15(31%)
respiratory	7(14.5%)	3(6.2%)	10(21%)
Ischemic heart disease	2 (4.1%)	1(2%)	3(6.2%)
TOTAL	29 (60.4%)	19 (39.5%)	48

DISCUSSION

We conducted this prospective observational study for detection of

undiagnosed comorbid conditions in patients coming for PAC in secondary health care hospital. In our study, 39.5% of population was diagnosed with new systemic diseases.

As our institution is situated in rural area, we expect our patients who are coming to the Pre anesthesia clinic, as the first contact between clinician and patient, so there are higher chances of detection of new comorbid conditions. The prevalence of anemia in this population was high, as nutritional deficiency is quite common in rural area.

In past, the main reason established behind the delays and cancellation of cases was found to be, PAC evaluation which was conducted a day before elective surgery. But now pre-anesthesia clinics are well established, due to which patients are evaluated much before surgery. The first PAC clinic was set by Lee in 1949.^[13]

A similar study was conducted at Brigham and Women's Hospital at Boston on value of preoperative clinic visit in identifying issues with potential impact on Operation room efficiency. A Total of 5,083 patients were assessed in the PAC clinic. They found 647 (12.7%) patients with 680 comorbid conditions. Out of these, 115 (17 %) patients were diagnosed with new medical conditions and these required new testing and consultation. They concluded that PAC serves a major platform in identification and treatment of number of comorbid conditions and can impact efficient use of operating room resources.^[14] In contrast to their study, we found comorbid conditions in 28% of patients, of which 39.5 % were newly diagnosed while doing PAC. These differences can be due to demographic differences.

Haq et al., in their study conducted in a PAC clinic at a tertiary care center in Delhi, found the most frequent comorbid condition to be hypertension (55.3%), which was quite similar to our findings of 42% cases of hypertension. They advocated the role of PAC in detecting previously

undetected comorbid illness which can have a greater impact on patient outcome.^[15]

Similar results were found in an observational study done by Jacob et al., in a tertiary care hospital on prevalence of comorbidities. They identified 1724 comorbidities in 1274 patients. Of these 1374 diseases were identified for the first time. They also purported the usefulness of PAC in detecting hidden medical conditions.^[16]

PAC not only helps the anesthetist in building rapport with the patient but also serves as a modality for identifying high risk patients with comorbidities, which can have a major implication on the perioperative management and plan of anesthesia.

CONCLUSION

Pre anesthetic evaluation helps in detecting various medical conditions previously unknown to the patient and thus guides in formulating proper management plan for better patient outcome.

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