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Original article

An audit of knowledge regarding postanaesthesia care among residents in a tertiary care hospital

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ABSTRACT

Introduction: A Postanaesthesia Care Unit (PACU) is a specifically assigned area where patients receive pertinent postanaesthesia care after general anaesthesia, regional anaesthesia or local anaesthesia. Anaesthesiologists play an extensive role in monitoring for improving the safety of patients and are thus obligated to audit their practices.
Aims and objectives: To evaluate knowledge regarding standards of postanaesthesia care among post-graduates and senior residents working at a tertiary care referral centre in Delhi.
Material and methods: A structured, self-administered questionnaire was administered to post-graduates and senior residents working in the hospital during August 2015.
Results: Of the 78 resident doctors, 43.6% post-graduates (PGs) and 38.20% senior residents (SRs) agreed that vital signs should be checked every 15 min in the PACU. However only 48.7% PGs and 61.5% SRs agreed that patients are not required to pass urine and 66.7% PGs and 74.4% SRs were aware that patients are not required to drink and retain clear liquids prior to discharge.
Conclusion: There were certain gaps in knowledge of resident doctors and these lacunae in awareness were identified and recommendations were made to pave the way for executing these guidelines in routine practice.

1. Introduction

A Postanaesthesia Care Unit (PACU) is a specifically assigned area where patients who received general anaesthesia, regional anaesthesia or local anaesthesia receive pertinent postanaesthesia management. The necessity of this practice has never been in doubt. Anaesthesiologists have an extensive role in monitoring, both intraoperatively and postoperatively, for improving the safety of patient care. Thus they are obligated to audit their practice on a regular basis. A clinical audit is defined as a quality improvement process that seeks to improve patient care and outcomes through the systemic review of care against explicit criteria and the implementation of change. The foundations of quality patient care begin during training, but with rapid developments in medical knowledge, awareness of latest advances is required to maintain optimum standards. The objective of this audit was to evaluate awareness regarding standards of postanaesthesia care among post-graduates and senior residents working at a tertiary care referral centre. Lacunae in the awareness were identified and recommendations were made to pave the way for executing these guidelines in routine practice.

2. Material and methods

An audit was undertaken to review the knowledge of residents working at Lok Nayak Hospital which is a tertiary care hospital in Delhi regarding postanaesthesia care during August 2015. A structured, self-administered questionnaire was administered to all (1st year, 2nd year and 3rd year) post-graduates (PGs) and senior residents (SRs) working in the hospital. A total of 44 PGs and 45 senior residents working in the hospital were given the questionnaire out of which 39 PGs and 39 senior residents respectively participated in the audit. The questionnaire consisting of 15 questions was designed to assess the awareness among resident doctors regarding postanaesthesia care and to suggest implementation of changes with the intent to improve post-anaesthesia care in the hospital. The first question asked how often vital signs should be measured in the PACU. The second question was about which member of staff should accompany a patient from the operation theatre (OT) to the PACU as it is mandatory that

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a member of the anaesthesia team should do so. The third question assessed whether the anaesthesiologist re-evaluated the patient upon arrival in the PACU and provided a verbal report to the responsible PACU nurse and ordered a mandatory minimum stay in the PACU after anaesthesia. The next two questions were related to discharge criteria and scoring systems to assess fitness for discharge. The residents were then asked whether patients are required to drink and retain clear liquids and pass urine before discharge and what was the most significant cause of delayed discharge and unplanned hospital admission. The next 4 questions were related to recovery after spinal anaesthesia. A database was then created and analysed using SPSS software version 16.

3. Results

A total of 78 resident doctors participated in the study. The age of the respondents varied from 24 to 30 years.

Out of the 39 PGs, 43.6% knew that vital signs are to be checked every 15 min, whereas only 38.20% of the SRs could answer this question correctly. On the other hand, all the SRs and 97.4% of the PGs were aware that a member of anaesthesia team should accompany the patient to the PACU. Upon arrival in the PACU, 66.7% of PGs and 82.1% SRs recognised that they need to re-evaluate their patients and provide a verbal report to the responsible PACU nurse. However, only 25.6% of PGs and 41% of the SRs were aware that there is no minimum mandatory stay time required in the PACU after anaesthesia and the stay may vary from case to case.

Almost all of the PGs (97.4%) and all the SRs agreed that discharge from PACU should occur only after the patients have met specified criteria and 92.3% of the PGs and all the SRs were of the opinion that the use of scoring systems assist in documenting fitness for discharge. 85.9% of all the resident doctors (76.9% PGs and 94.9% of SRs) were aware of the names of the commonly used postanaesthesia discharge scoring systems.

As many as 51.3% PGs and 38.5% SRs thought that it was necessary for patients to pass urine prior to discharge from PACU and also 33.3% PGs and 25.6% SRs were of the wrong opinion that all patients are required to drink and retain clear liquids before discharge from PACU.

Only 30.8% of residents were aware that post-operative pain is the most significant cause of delayed discharge and unplanned hospital admission in the ambulatory surgical setting. Of these 28.2% were post-graduates and 33.3% were senior residents. 20.5% of residents thought that delayed discharge and unplanned hospital admission was usually due to urinary retention, 39.7% thought the cause was nausea and vomiting and 8.9% attributed this to surgical bleeding.

A higher number of SRs (89.7%) and 66.7% of PGs knew that residual blockade of the sympathetic nerve supply to the bladder and urethra may lead to urinary retention. Of the 39 PGs, 17 (43.6%) said that they always performed a neurological examination after spinal anaesthesia, 20.5% of them performed a neurological examination most of the time, 20.5% sometimes, 7.7% rarely performed a neurological examination and another 7.7% never did. Similarly 48.7% SRs said that they always performed a neurological examination after spinal anaesthesia, 25.6% performed a neurological examination most of the time, 17.9% sometimes, 2.6% rarely and 5.1% never.

Prior to allowing ambulation after spinal anaesthesia, 67.9% of the resident doctors (64.1% of the PGs and 71.8% of SRs) knew that complete recovery of sacral segments was signified by return of normal perianal sensation, ability to plantar flex the foot, and proprioception of the big toe. Only 12.8% of PGs knew that the micturition reflex returns in most patients on regression of the spinal block to the third sacral segment. The response in SRs was only slightly better (35.9%). As many as 61.1% PGs and 41.1% of SRs thought it is still recommended that all patients are to lie flat supine for 24 h after subarachnoid block in order to prevent PDPH.

4. Discussion

The PACU serves as an interim area where patients are nursed in the postoperative period following anaesthesia care and bridges the transition from close monitoring in the surgical unit to a lower level of monitoring in the hospital ward or, following day care surgery, to independent function of the patient at home. This area should be designed and staffed to monitor and care for patients recovering from the immediate physiologic effects of anaesthesia and surgery and should be located in close proximity to the operating rooms in order to allow immediate access to anaesthesiologists for any consultation or help.

During PACU stay there may be a number of physiological disturbance in patients following anaesthesia and surgery which cause considerable morbidity and sometimes mortality if undetected and untreated. Certain standards of postanaesthesia care have been suggested in order to minimise postoperative complications. It is important that anaesthesia providers are aware of these standards in order to optimise patient care in the PACU.

Practice standards define the required obligation of minimal care in the clinical setting and may be exceeded as and when indicated by the clinical judgment of the concerned practitioner. Practice guidelines developed by the American Society of Anesthesiologists (ASA) are not intended as standards or absolute requirements, and their use cannot guarantee any specific outcome and are subject to revisions as warranted by the evolution of medical knowledge, technology, and practice.

The American Society of Anesthesiologists (ASA) Standards for Postanesthesia Care [1] recommend that all patients shall receive appropriate postanaesthesia management after receiving general anaesthesia, regional anaesthesia or monitored anaesthesia care (MAC). It is suggested that a patient transported to the PACU shall be accompanied by a member of the anaesthesia care team and should be continually evaluated and treated during transport with monitoring and support appropriate to the patient's condition. It is also recommended that upon arrival in the PACU, the patient shall be re-evaluated and a verbal report provided to the responsible PACU nurse by the member of the anaesthesia care team and the patient's condition shall be evaluated continually in the PACU with particular attention given to monitoring oxygenation, ventilation, circulation, level of consciousness, and temperature. During the period of recovery from all anaesthetics, a quantitative method of assessing oxygenation such as pulse oximetry shall be employed in the initial phase of recovery. Finally, a physician should be responsible for the discharge of the patient from the PACU.

In this audit, all the SRs and 97.4% of the PGs were aware that a member of anaesthesia team should accompany the patient to the PACU and 66.7% of PGs and 82.1% SRs recognised that they need to re-evaluate their patients after reaching the PACU and provide a verbal report to the responsible PACU nurse. Before transfer, the anaesthesiologist should be satisfied that the PACU staff are competent and will be able to take responsibility for the patient. If this cannot be assured, the anaesthesiologist should stay with the patient, either in the operating theatre or the PACU, until it is deemed that the patient may be left safely in the care of the nursing staff in the PACU. It is essential that the anaesthesiologist formally hands over care of the patient to an appropriately trained and registered PACU practitioner [3].

Vital signs in the PACU should be recorded as often as necessary but at least every 15 min while the patient is in the unit [4]. Out of 39 PGs, 43.6% knew that vital signs are to be checked every 15 min,

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