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Research Article

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[Knowledge, attitudes and skills of doctors, nurses and emergency medical technicians in pre-hospital care and emergency medicine who accompany patients in ambulances which arrive at the National Hospital of Sri Lanka](#)

Objective: To assess the knowledge, attitudes, and skills in pre-hospital care and emergency medicine of doctors, nurses and Emergency Medical Technicians (EMT), who accompanied emergency patients in ambulances?

Methods: A descriptive cross-sectional study was conducted among the doctors, nurses, and EMT who accompanied emergency patients in ambulances to the National Hospital. All ambulances arriving from August to October 2008 (n=409) were screened. A self-administered questionnaire with 30 items was used to assess knowledge, attitudes, and skills. The knowledge was categorized into three levels, EMT-basic level, EMT-intermediate level, and EMT-paramedic level and the scores were converted into the percentages.

Results: The overall knowledge score on basic, intermediate and paramedic level were 57.5%, 42.9%, and 33.9% respectively. The knowledge on airway management (84.3%), bleeding control (82.9%), patient transport (71%) and first aids (61%) at the EMT-basic level were higher, however oxygen administration (37.1%) and basic life support (38.6%), spinal immobilization (45.7%), traction splinting (47%) and triage (48.6%) were lower. For the EMT-intermediate level, knowledge on endotracheal intubation (41.4%) and initial cardiac drug therapy (44.3%) were low. For the EMT-paramedic level, the knowledge on the advanced respiratory support (53%), ECG interpretation (37%), pharmacology (13%) and paediatric life support (20%) were lower.

Most staff showed positive attitudes towards the need of basic knowledge in pre-hospital care (97.1%, n=34), need for proper training (97.1%, n=34) and cost for pre-hospital care (77.1%, n=27), while they showed relatively negative attitudes towards the outcome of pre-hospital care (74.3%, n=26).

For the required skills for advanced life support, most of the staff showed skills in IV cannulation (71.4%, n=25) and IV drug administration (71.4%, n=25) however less skills were shown cricothyroidotomy (22.9%, n=8), pleural drainage (25.7%, n=9) and laryngoscopy and intubation (31.4%, n=11).

Conclusion: The knowledge at the EMT-basic level was average and intermediate and paramedic levels were lower than average. The attitudes were generally positive. However they lacked some specific skills.

Research Article

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[Some aspects of quality of ambulance care and completeness of information in the transfer forms of emergency patients who arrived in ambulances at the National Hospital of Sri Lanka](#)

Objective: To describe some aspects of the quality of ambulance care and completeness of information in the transfer forms of emergency patients who arrived in ambulances to the National Hospital of Sri Lanka (NHSL).

Methods: This was a descriptive study. All ambulances arrived at the NHSL during the study period with an emergency patient were selected (n=409) and from those 250 transfer forms, which could be traced were taken. An interviewer-administered questionnaire was used for ambulance staff. A Checklist, which has been derived from the standard patient chart, was used to determine the availability of information on transfer forms.

Results: Of the 409 ambulances, the patient was accompanied by a doctor in 4% (n=16), a nurse in 4% (n=15) and Emergency Medical Technicians (EMTs) in 1% (n= 4), and there were 675 minor employees and 409 drivers. Twenty six percent (n= 4) of doctors, 12.5% (n= 2) of nurses, 100% (n=4) of EMTs, 56.9% (n=189) of drivers and 24.3% (n=164) of minor employees had received training in emergency medicine/pre-hospital care.

The time interval between receipt of the message and loading the patient to the ambulance was >15 minutes on 19% (n= 75) of the occasions and from the latter time to commencement of the journey was >15 minutes on 7% (n=27) of the occasions.

The call number of sending facility 0.4% (n=1) and sending time 33.2% (n=83) were poorly documented. The past surgical histories 20.8% (n=52), chronic diseases 48% (n=120), psychological problems 13.2% (n=33) and allergies 9.2% (n=23) were poorly documented. Details of physical examination findings except cardio-vascular system were not documented in >50% of transfer forms. Medications had been documented fairly (>60%) in most of the transfer forms and however, the procedures (IV fluids, ECG) were poorly documented (<30%).

Conclusion: The completeness of information in the transfer form was not up to standards. This emphasizes for need of well-structured standard transfer form in the country.

Research Article

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[Effects of intraoperative epidural anesthesia during hepatectomy on intraoperative and post-operative patient outcomes](#)

Objective: The objective of this study was to evaluate the effects of intraoperative epidural anesthesia combined with balanced general anesthesia on intraoperative hemodynamics and fluid requirement, and on postoperative patient outcome.

Design: The study design was a retrospective data analysis of patients undergoing open hepatectomy at a single tertiary care center from May, 2013 to June, 2016. Patients undergoing hepatectomies were separated into two groups: patients not receiving epidural local anesthetic intraoperatively (either no epidural or epidural catheter not used intraoperatively) were designated the control group and patients receiving epidural local anesthetic intraoperatively (bolus and/or continuously). Patients were excluded if they underwent laparoscopic or non-elective procedures.

Results: 103 patients were included in the data analysis: Control n=14, Epidural = 89 patients. There were no major differences in demographics between groups. Epidural patients did not have higher requirements in intraoperative intravenous fluid administration, blood loss, or vasopressor use compared to control patients. Patients who received epidurals required less intravenous opioids with better post-operative pain scores initially and also on post-operative day 2. There were no differences in length of time to ambulation, or post-operative acute kidney injury amongst groups.

Conclusions: This study shows that patients undergoing hepatectomies using combined epidural and general anesthesia: 1) have no increased requirement for intraoperative crystalloid, colloid, or blood component therapy, 2) require lower total intravenous opioid dose, and 3) subjectively report better pain control. Therefore, intraoperative epidural anesthesia combined with general anesthesia may be advantageous for ERAS protocol based oncological procedures.

Research Article

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Background: Despite remarkable progress in surgical, cardiopulmonary bypass (CPB) and anesthetic techniques, neurocognitive damage still remains an important cause of postoperative morbidity in cardiac surgery. The aetiology of neurocognitive damage is likely to be multifocal; including macro and microemboli, cerebral hypoperfusion, inflammation and nonpulsatile flow. N-methyl-D-asparticAcid (NMDA) receptors play an important role during neurocognitive damage. Ketamine is a non-competitive antagonist to the phencyclidine site of NMDA receptor for glutamate and directly suppresses proinflammatory cytokine production. The aim of the present study was to evaluate whether ketamine has neuroprotective effects during open-heart surgery through the use of neurocognitive tests.

Methods: We considered all patients aged between 58-76 years who were referred to a single cardiothoracic surgical team for elective, primary coronary revascularization. Patients were excluded from the study for the following reasons: a history of neurological, psychiatric, gastrointestinal, hepatic, renal, hematologic and clotting systems disorder and repeat procedures. Undergoing CPB were randomized 2 groups: Group1 (ketamine)(n=25) or Group2 (propofol)(n= Patients 25) In the propofol group, anesthesia was induced with 3mg/kg propofol, 1µg/kg remifentanyl, 0.1mg/kg vecuronium. Remifentanyl 0.5-1?g/kg/min was infused intravenously throughout the whole procedure. In the ketamine group, anesthesia was induced with 1-2mg/kg propofol, 1-2mg ketamin, 0.1mg/kg vecuronium. Ketamin 1mg/kg/hour was infused intravenously. Pressors, inotropic agents and antiarrhythmics were used as needed. The Mini-Mental State Examination(MMSE) was administered the day before surgery and three days later. The change in scores for MMSE was calculated for each patient and all the group. The results were compared statistically with paired simple t-test.

Results: The mean age, CBP duration, lowest temperature was not statistically significant (Table1). Peroperative and postoperative blood pressures and pulse rates showed differences between groups. There were no preoperative differences between the groups on any of the mean MMSE score (Table2). The ECG monitoring revealed that most patients remained in sinus rhythm, with no difference between groups.

Conclusions: We could not demonstrate that intraoperatively administered ketamine resulted in greater neuroprotective effects compared with propofol. Ketamine in combination with propofol during cardiac surgery is associated with a stable hemodynamic profile. Propofol may reduce the delivery of microemboli to the cerebral circulation by decreasing the cerebral blood flow. Propofol has a direct neuroprotective effect in vitro, although Roach et al. could not demonstrate a protective effect of propofol during open-heart surgery. Propofol enhances the antiinflammatory response to surgery by several mechanisms. This might have masked a neuroprotective effect of ketamine because propofol was administered in both groups in our study.

Research Article

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[The incidence of hemodynamic and respiratory adverse events in morbidly obese presenting for Bariatric surgery](#)

Context: Perioperative management of morbidly obese patients undergoing bariatric surgery is challenging. Lacking standardized perioperative protocols, complication rates may be high. This retrospective study aims to quantify the incidence of significant blood pressure decreases on induction of anesthesia and intraoperative hypoxemia, before implementation of a standardized protocol designed for bariatric surgery.

Design: Retrospective, observational study.

Setting: A 250-bed county hospital in northern Sweden.

Subjects: 219 morbidly obese patients (body mass index > 35 kg/m²) who underwent bariatric surgery between 2003 and 2008.

Main outcome measures: Incidence of systolic blood pressure (SAP) falls to less than 70% of the preoperative baseline during induction of anesthesia and incidence of perioperative hypoxemia.

Results: The incidence of confirmed SAP falls to below 70% of baseline at induction of anesthesia was 56.2% (n = 123/219). This incidence rose with increasing age (p < 0.001) but not with body mass index (BMI). 3.7% (n = 8/219) of cases were marked as difficult intubations. A transient period of hypoxemia was observed in 6.8% (n = 15/219) and was more common with increasing BMI (p = 0.005). Fourteen different drug combinations were used in the study population. Of those administered an induction anesthetic drug, 72.6% (n = 159/193) were given an overdose when calculated by lean body weight, but this did not correlate significantly to SAP falls (p = 0.468).

Conclusion: The incidence of a significant blood pressure fall upon induction of anesthesia was common. The incidence of airway and ventilation problems were low. Overdosing of anesthetics and excessive variation in applied anesthesia methods were found.

Research Article

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[The impact of two different doses of Dexmedetomidine to Local Anesthetic Mixture on the quality of single injection Peribulbar Block in Vitreoretinal operations](#)

Objective: To evaluate the impact of adding two different doses of dexmedetomidine to local anesthetic mixture on the quality of single injection peribulbar block in vitreoretinal operations

Design: A prospective, double-blinded and randomized study.

Setting: carried out in operating room of our university hospital.

Patients: The study included 120 patients with vitreoretinal diseases who were scheduled for vitreoretinal operations during the period from April 2016 to March 2017.

Interventions: 120 patients were randomly allocated to three groups of 40 patients each. Group I (the control group) received 5-7 ml mixture of lidocaine 2% and Levobupivacaine 0.5% with 120 IU of hyaluronidase, group II received 5-7 ml mixture of lidocaine 2% and Levobupivacaine 0.5% with 120 IU of hyaluronidase + 15 µg dexmedetomidine, and group III received 5-7 ml mixture of lidocaine 2% and Levobupivacaine 0.5% with 120 IU of hyaluronidase + 30 µg dexmedetomidine

Measurements: The primary outcome was to evaluate the impact of adding two different doses of dexmedetomidine on the onset of globe anesthesia and akinesia. Secondary outcomes were the duration of globe anesthesia and akinesia, overall patient satisfaction and surgeon satisfaction.

Results: The onset of globe anesthesia was significantly shorter in group II and III in comparison with group I. Adding dexmedetomidine to the local anesthetic mixture prolonged the duration of globe analgesia, and this difference was statistically significant in group II and III in comparison with the group I.

Conclusion: Adding dexmedetomidine to a mixture of lidocaine 2% and levobupivacaine/hyaluronidase mixture in single injection peribulbar block shortened sensory and motor block onset, extended the analgesia period and the motor block duration with high patient and surgeon satisfaction.
