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## Preparedness for emergencies and complications: Proactive planning and multidisciplinary approaches

Preparation for emergencies and unanticipated situations in clinical routine is not just a short term proactive drill. Rather, the learning curve follows a long lag and log phase with passing time as we face numerous adverse situations, which become part of not only our learning but of teaching tool as well. Patient safety is of utmost concern whenever any research work is undertaken. Although these research studies are done in a controlled atmosphere under supervision, but still there are probabilities that one may face unexpected or predictable complications for which our attentiveness will definitely help in overcoming the calamity.<sup>[1]</sup> As the subject of medicine is so vast, involvement of multidisciplinary team (MDT) members from different specialties in these activities can potentially help in overcoming many of the shortcomings in patient care so as to pave way for safe anesthesia and surgery. The presence of MDT members will create a wider thinking pattern of overcoming the problems as well as present a divergent view of the associated weaknesses and potential complications thereby enhancing the safety of the patients. Even in our routine professional life we may face such situation that strikes us by surprise and shock for which we may not be adequately prepared. More importantly, in some circumstances we may not get adequate professional help especially in practitioner's sphere, where the situation can turn into disaster. Therefore, the clinical guidelines formulated till date for almost every anticipated complication necessitate proper preparation and proactive anaesthesia planning before undertaking any surgical procedure.

One of the studies being published in this issue of Indian Journal of Anaesthesia (IJA) highlights the modifiable risk factors in the daycare ambulatory strabismus surgery for postoperative nausea and vomiting (PONV) and also emphasized the need for

proactive approach to deal with these complications.<sup>[2]</sup> This is a retrospective study but if similar research studies are to be undertaken in any form of local, regional, or general anaesthesia, such patients should be observed and followed up for a minimum of 24 hours for possible development of PONV. The presence of multiple episodes or intractable PONV can possibly cause deleterious effects on patient's general condition leading to higher morbidity if left unattended in the form of wound dehiscence, globe perforation, pulmonary aspiration, dehydration and electrolyte imbalance especially in extremes of ages. The indirect message delivered through this study implies that these surgeries should be undertaken with a proper preoperative preparedness and a patient-centered plan for managing such complications so that all the modifiable risk factors can be adequately covered. The role of MDT for postoperative care is emphasized during treatment of such cases as anaesthesiologists cannot do follow up of all cases. Pre-planned collaborative care with concerned specialties is gaining momentum for better patient outcome both before and after surgery during such research or therapeutic activities.

A major chunk of laparoscopic cholecystectomy surgeries are being operated upon in the non institutional setups across India. Leaving aside the controversy of general anaesthesia (GA) vs spinal anaesthesia, majority of patients undergoing such surgeries are invariably administered general anaesthesia with halothane as desflurane, sevoflurane and isoflurane vaporizers are not available everywhere. The study being published in this issue has compared the hepatotoxic effects of desflurane and sevoflurane during similar surgeries in patients with impaired hepatic functions.<sup>[3]</sup> They have labeled desflurane as less hepatotoxic than sevoflurane and scientifically

it has been already established that halothane has considerably higher hepatotoxic potential.<sup>[4]</sup> Hepatic impairment disease management is a complex phenomenon and should have open constructive discussions about the preoperative problems and formulation of better surgical and anaesthesia plan to minimize the morbidity. Outlining the quality preoperative planning in patients with deranged hepatic functions by the surgical and anaesthesia teams not only will ensure minimum insult to hepatic tissue intraoperatively but will also enhance inter specialty mutual self respect. Further, the formulation of patient-centered care plan may necessitate the use of alternative techniques including total intravenous anaesthesia (TIVA) or thoracic epidural anaesthesia if required.

Aspiration risk should always be anticipated in diabetic patients with autonomic neuropathy and long-standing diabetes mellitus during induction of anaesthesia as gastroparesis may slow down gastric emptying. Keeping these risks in consideration, the study being published in this issue has evaluated the gastric volume by ultrasound both in supine and right lateral decubitus position. The authors observed a higher gastric antral cross-sectional area and volume in diabetics as compared to non-diabetics.<sup>[5]</sup> This study aims at preparedness and anticipation of aspiration risk during induction of GA in diabetic patients. Preoperative assessment of such patients by anaesthesiologist, gastroenterologist, endocrinologist, and surgeons can help in better preparation of anesthetic plan and surgical pathway thereby minimizing the complications as MDT members can contribute substantially with individual decisions. Such cases when get operated in peripheries may not have the luxury of MDT services but constructive and active preoperative involvement of surgeon and anaesthesiologist can still minimize the incidence of potential complications and morbidity. However, the risk is difficult to quantify as few patients with diabetes mellitus do have associated difficult airway, which can further contribute to the risk of aspiration.

Perioperative risk is further enhanced when gross hemodynamic fluctuations, alterations in respiratory dynamics, and acid-base disturbances occur intraoperatively. These risks are highlighted by this study in which the patients undergoing GA with smoking history had significantly deranged arterial blood gas parameters intraoperatively as compared

to non smokers.<sup>[6]</sup> As such, thorough preparation and planning is essential in smokers with cardiac diseases as these changes can accentuate sensitivity of cardiac tissue to catecholamines with resultant higher morbidity. The message is clear that anaesthesiologist should have a sound plan and preparedness to deal with such morbidities during anaesthesia in smokers irrespective of the duration of smoking in these subsets of patients. In such patients, need for optimization, evaluation of risks, assessment of frailty by MDT will guide us for better treatment plans both pre-operative and post-operatively. The main aim of MDT is to support the patient care by planning pre-emptively to minimize the morbidity and enhancing safe anaesthesia and surgery practices.

The role of MDT was never as prominent and visible at global level the way it is being exemplified in the present pandemic. Never been the entire world caught unaware and unprepared amidst global turmoil where every nation is bearing the brunt of an invisible enemy. The frontline intensivists, physicians, paramedical staff, police, and other support staff is living and working every day in an atmosphere, which is full of uncertainties and challenges. Almost every nation was taken by horror and surprise by the rapid momentum of invasion by the covidemic. Numerous advisories, articles, precautions, webinars and both online and offline messages have covered the threat of COVID-19 disease over the last three to four months.<sup>[7,8]</sup> In these circumstances, health and allied infrastructure preparation and planning to control this pandemic was found wanting even in the nations famous for their best health infrastructure and services. As a result, it led to the development of huge social, political, economic, clinical, and behavioral chaos throughout the globe. In India too, a somewhat similar picture is emerging for the last one month though the magnitude is quite low till now as compared to worst suffering countries.

The words "Ventilator and Intensive Care Unit (ICU)" have also undergone a huge social and clinical transformation over the last few months. Once considered a machine for impending and definite mortality by majority of general public, the ventilator has acquired a new socio-clinical status of 'Life Savior' courtesy the corona virus. This pandemic is continuously bringing a change in the social thinking outlook of common people about the deep clinical insights of intensive care. It has been generally observed in the past that many of the violent

incidences occurred after patients expired in the ICUs. Proactive planning and preparation has become extremely essential in wake of medicolegal concerns and changing attitude of the society, the most common example include but is not limited to breaking of bad news in ICU. As such communication skills and better method of clinical conduct attain special status during our postgraduate curriculum and intensive care training. A balanced communication along with video consenting from time to time will avoid the development of adverse situation during crisis hour. This pandemic has also exposed once again the lack of preparedness, magnitude anticipation as well as check on sporadic episodes of violent behavior against health workers and other personals during treatment and diagnostic visits. However, after first few incidences, these frontline warriors are now a little better equipped and mentally prepared to tackle such scenarios. Going ahead, only strict laws and legislation by the government agencies can ensure the safety of life saviors in ever-changing social and moral dynamics of the society.

In coming times, COVID-19 will serve as a unique example in almost every ICU so as to make everyone understand the real clinical condition of the patient. In coming days, we may face increasing numbers of surgical, orthopedic, obstetrical, and other types of patients for emergency surgeries. The Indian Society of Anaesthesiologist (ISA) update on these surgeries related to COVID-19 patients is also being published in this issue of IJA.<sup>[9]</sup> This advisory has comprehensively covered the precautions, planning, and preparedness to design the set up of COVID-19 operation theatres and also outlining their smooth functioning. The most common denominator among surgeries and handling of critically ill COVID-19 patients is the procedure of intubation, which creates the highest risk of disease transmission. Video laryngoscope and fiberoptic bronchoscope may not be available at all the centers but simple plastic draping, face shields, and aerosol protection box if available can be of immense help in preventing the transmission of infection during intubation.<sup>[9]</sup>

COVID-19 is teaching us many lessons and one of them is proactive approach and innovation. It is a proven thing now that rather than chasing the virus (retrospective approach) one should be steps ahead of it by having a proactive approach, maybe for diagnostic or therapeutic interventions. This pandemic has come and will definitely go as nothing is permanent

in this world. However, when the world comes to its cooler level, daily routine and clinical activities of these frontliners will ensue again and they will learn to be more proactive in such scenarios and prepare themselves better for the next time.

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