

One nation, one roof, one set of preoperative investigations.....The guidelines overcoming a diverse demography!

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India being a country of diversity, diverse aspects can be seen in everything: her culture, beliefs, seasons, festivals, religions, food habits, clothing and so on. The healthcare practices too are diverse, and this includes perioperative medicine.^[1] Though the surgical techniques and the perioperative management are evidence-based, there are several gaps in this area, which need to be worked upon. One of these is the issue of ordering preoperative investigations. Numerous subjective and documented incidences can be counted where the surgical fraternity gets frustrated by the investigations ordered by the anaesthesiologist. These kinds of skirmishes and conflicts with complaints about ‘unnecessary’ ordering of preoperative investigations through the desks of the administrators of hospitals and heads of anaesthesia departments. Then, there is another group of the surgical fraternity who get ‘A to Z’ investigations [from haemoglobin (Hb) to 2D echocardiography] done just to avoid the postponement of cases apart from getting a protective shield against medico-legal litigations. The picture of the surgical/obstetrics and gynaecology resident getting scolded by the seniors for not having got the laboratory investigations done preoperatively is familiar to most of us! The most important and common thing that surgeons fear is the postponement of the scheduled case by the anaesthesiologist due to a lack of a particular preoperative investigation or

an abnormal preoperative laboratory investigation value. It can be concluded from here that ‘not-really indicated’ investigations are done many a time. Many studies have shown that 2/3rd of the ordered preoperative investigations are not necessary and that there is a high prevalence of superfluous preoperative testing for healthy patients of American Society of Anesthesiologists physical status (ASA PS) I and II undergoing elective surgical procedures.^[2-4] Also, the ordering of preoperative investigations by anaesthesiologists is more rational and pertinent than that by surgeons.^[4] The situation of a beginner consultant anaesthesiologist being forced to give a surgical case without the ‘required preoperative investigations’ is pitiable. Which investigation is ‘required’ and which is not ‘required’ is the million-dollar question. The preoperative investigation practices vary from centre to centre and sometimes, between anaesthesiologists in the same institute and for different patient populations. The variable dietary patterns, disease patterns, clinical presentations and comorbidities add colour to this regionalism and diversity in the ordering of preoperative investigations.

Many a time, a big parcel of investigations is advised to the patient coming to the pre anaesthetic evaluation (PAE) clinic. The flabbergasted patient

comes out and after finding out about the costs of these investigations, sometimes abandons his idea of getting operated or will go to another hospital, as 60% of India's population lies below the poverty line. The various state-run schemes and policies too are variable and may not apply to all patients. Will this not compromise patient safety? India is a resource-challenged nation, and laboratory facilities may not be available in all areas. In such places, the ordering of laboratory investigations envisages sending the blood/urine/other samples to distant laboratories. This entails more time and disturbance of the cold chain during the transport of the sample, which can lead to erroneous laboratory values that can in turn lead to errors in diagnosis and clinical management and also lead to delay in the surgical procedure. Getting too many investigations done increases the psychological stress too amongst both patients and surgeons.

All this shouts out aloud one thing in unison.....We need a set of minimum preoperative investigations that can be applied in any kind of healthcare setup: the district civil hospitals, the medical colleges, the nursing homes or the central healthcare and teaching institutes. 'One nation...One set of minimum preoperative investigations' is the need of the hour. Nevertheless, the Indian Society of Anaesthesiologists (ISA) having realised this need has come out with the practice guidelines for preoperative investigations which are being published in this issue of the Indian Journal of Anaesthesia.^[5] The striking aspect is that the authors from all parts of the country have participated in the formulation of these guidelines, which perhaps have potentially nullified the diverse demographic factors of our nation. These guidelines are prepared to streamline the ordering of preoperative investigations and to promote 'judicious ordering' as mentioned in the preamble. They provide recommendations for routine preoperative investigations in ASA PS I and II patients scheduled for elective surgical procedures. It is worth noting here that it is in this class of patients that maximal dilemmas and controversies regarding the ordering of preoperative investigations arise. In the ASA PS grades beyond these, the comorbidities and physician consultations and the drug intake will demand a variety of investigations which will have to be individualised.

Guidelines evolve from extensive systematic reviews (SRs) and meta-analyses (MA) of existing studies on the topic. SRs and MA on randomised controlled trials (RCTs) occupy the highest position in the pyramid of

evidence-based medicine; unfortunately, as mentioned by the authors of the guidelines on preoperative investigations, RCTs on this topic are currently not available and in the available studies, the data presented are inadequate. The certainty level is low/very low and hence the recommendations formulated for all the research questions in the formulated guidelines are weak. This means that there is an urgent need to conduct research in the form of RCTs/robust observational studies on this topic. Though guidelines can be a great help in clinical decision-making, studies show that many health professionals do not follow them. Hence, to make them effective in producing a change in the established behaviour patterns of health professionals, an effective implementation strategy for the guidelines is needed.^[6] Thus, at the moment, the toughest job would be to appraise all anaesthesiologists of our nation and our surgical, gynaecology, orthopaedics, rhino-otolaryngology colleagues about the guidelines. Many a time, the process of preoperative evaluation and the ordering of investigations is actually begun by the surgeon in the surgical outpatient clinic or wards.^[7] PAE may be anaesthesiologist-led/surgeon-led or nurse-led. Hence, the ISA National including all its state and city branches will have to work hard on this by organising lectures and discussions on the guidelines in association with the members of the Federation of Obstetric and Gynecological Societies of India (FOGSI), Association of Surgeons of India (ASI) and other associations. This will facilitate the easier acceptance of the guidelines by surgeons and administrators.

Preoperative history taking and detailed clinical examination are the backbone of PAE, and they cannot be a substitute for preoperative investigations. In fact, the ordering of preoperative investigations is based on the history and physical examination followed by ASA PS classification. But the irony is that patients have high variability in literacy and intellectual aspects; they give incomplete histories or hide histories and many a time, common diseases like diabetes mellitus are diagnosed during a PAE, especially in a population that is poorly exposed to healthcare facilities.^[8] Nevertheless, some studies have shown that the detection of comorbidities from routine preoperative testing is extremely low.^[9] However, the primary purpose of PAE is to assess, know and diagnose unknown comorbidities which can affect perioperative management.^[7] Preoperative risk stratification models, indices and validated scoring systems are used commonly nowadays, and

these are used as a part of enhanced recovery after surgery (ERAS) protocols and to improve patient outcomes.^[10-12] ASA PS classification is a preoperative risk stratification tool that is used commonly for all kinds of surgery.^[13] The recommendations for preoperative investigations in the guidelines that are being published are based on the AS PS of the patient and hence, they might prove useful for ERAS protocols as well. Nowadays, telephonic PAE, electronic PAE and nurse-led PAEs are coming up in our country.^[14,15] Feedback on the application of these guidelines in such situations will help in updating the guidelines in the future. The examples for categorisation of surgical procedures and their list based on invasiveness and duration of surgery have been published in the guidelines, but as mentioned in the guidelines, the list is endless. If the categorisation of the procedure into minor/intermediate and major is not clear, the minimum preoperative investigations that can be advised for it will also not be correct. This is because the investigations recommended are based on the category of the surgery. Nonetheless, it is a common observation that surgeons are more interested in cut-off values of laboratory investigations/blood pressures, which will decide postponement/cancellation of surgery. Hence, future research on this aspect including minimum acceptable Hb levels, platelet count, etc., is needed.

Caesarean sections and other surgical procedures in obstetric patients, paediatric and geriatric patients form the heart of routine anaesthesia and surgical practice, especially in the peripheral regions of our country. However, there are specific pathophysiological changes in this population that make them different from others. Formulation of guidelines in these subsets of the population is in itself an herculean task, but a concrete base has been provided by the current guidelines, and such issues can be addressed in the coming days.

The armamentarium of airway assessment tests is full and the debate on which test is best is never-ending.^[16] At this juncture, the entry of the modality of ultrasonography (USG) of the airway is like adding fuel to the existing fire. USG is not yet available in all hospitals in our country. It can visualise only the structures anterior to the airway, and the dynamics of the airway need to be assessed by modalities such as magnetic resonance imaging (MRI) and fiberoptic bronchoscopy.^[17,18] It is likely that in the near future, the handheld point-of-care (POC) ultrasound will

be used routinely to facilitate preoperative rapid screening of the airway and spine.^[19]

POC testing which can be done at the patient's bedside or in a satellite laboratory is fast evolving; eg- dipsticks for urine analysis, hand-held glucometers for blood glucose, viscoelastic haemostatic assays with TEG[®]6s for functional fibrinogen level and rapid thromboelastography, instant non-invasive spectrophotometer for haemoglobin, POC tests for pregnancy, blood gases, electrolytes, troponin and infectious diseases.^[20-23] POC testing though simple, provides results in real-time and is less risky to use, and can be associated with errors.^[20] POC testing may help to minimise preoperative investigations in the future. Nevertheless, the guidelines on preoperative investigations are meant to reduce the friction between the operating surgeons and anaesthesiologists, to reduce the patient expenses on investigations, to reduce the burden of the laboratories and to serve as a strong weapon against medico-legal litigations. Only time and future research work and publications will provide insight into the extent to which the guidelines will succeed in these aspects. Audits and surveys on the degree of implementation and adherence to the guidelines need to be conducted in the coming days. The information obtained thereby can be used to update and improve the quality of the guidelines.^[24]

Meanwhile, it is important to remember that guidelines are not commandments or fixed rules that practitioners have to adhere to strictly under any circumstances. They are only meant to encourage and assist the clinical acumen of the physician in improving patient care and outcomes and help to curb the 'not really necessary' steps in the patient care process.^[25]

Currently, it can be said that the steps taken by the ISA to formulate evidence-based practice guidelines for preoperative investigations are in the right direction. These guidelines aim to standardise the practice of preoperative investigations for all regions of our country, smaller set-ups and large metros while acknowledging that India is a resourced challenged nation and not everyone can afford an array of investigations.

Meticulous history-taking, careful clinical examination and the use of metabolic equivalents (METs) and bedside pulmonary function tests to assess the functional and cardiopulmonary status can never be

substituted by any investigation. Our goal at present should be to follow the published guidelines, reduce cancellations in surgery and improve patient safety and perioperative patient outcomes.

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