

Practice and reasons for routine pre-operative investigations among anaesthesiologists and surgeons: An online survey

INTRODUCTION

The cost-benefit ratio of routine pre-operative investigations is not favourable, and the traditional practice of ordering routine pre-operative tests before elective surgery is not recommended.^[1,2] Evidence suggests that pre-operative tests are not associated with decreased mortality or better outcomes.^[3] However, the practice of routine pre-operative tests before elective surgery has remained widely prevalent.^[4,5] Health-care practices not only depend on practitioners' knowledge but also on the local laws, protocols, administrative policies, etc. The present study was aimed to assess the reasons behind this continued practice.

METHODS

A cross-sectional survey was conducted using free online survey software and questionnaire tool service from SurveyMonkey® (SurveyMonkey Inc., US, <https://www.surveymonkey.com>). The study sample was calculated with a hypothesised frequency of outcome 'practice of routine pre-operative testing' (65 + 10%) with a design effect of 1.4 which gave a sample size of 123 for 95% confidence level. To cope up with the non-responder, 100% add-on was done making the sample size 246. Totally 255 qualified anaesthesiologists and surgeons of different surgical disciplines from both public and corporate sectors, practising in more than 70 set-ups across India, were approached through e-mail during December 25, 2016–January 30, 2017. A questionnaire containing 5 simple questions with multiple choices was prepared. The reasons given as options were however mostly taken from a previously conducted study with similar objectives.^[6] The questions with binominal data (options) were based on current recommendations and guidelines.^[1,2] This was however not validated beforehand. The responses of the entire cohort were expressed in absolute number and percentage scale. The responses of anaesthesiologists and surgeons were screened and compared by Fisher's exact test using INSTAT software (GraphPad software Inc., La Jolla, CA, USA). $P < 0.05$ was considered statistically significant.

RESULTS

Twenty-one (8.24%) of the e-mails bounced and two (0.78%) recipients opted out from the survey. Seventy-one (30.6%) recipients responded to the e-mail invitation; 43 (60.56%) were anaesthesiologists. Fifty-eight respondents (34 [58.62%] anaesthesiologists and 24 [41.38%] surgeons) associated with 36 hospitals across India completed the questionnaire. The incomplete responses were excluded from the analysis as they responded only about their speciality.

Fifty-five (94.82%) respondents were practising routine pre-operative tests while only 29.31% knew that the current recommendations were against routine pre-operative laboratory tests [Table 1]. Among the reasons cited for ordering routine pre-operative laboratory tests, detection of hidden abnormality which may manifest for the first time during perioperative period was the most common reason (66.67%) [Table 1].

Table 1: Responses of the entire cohort expressed in absolute number and percentage scale (n=58)

Questions with options	n (%)
Do you practice routine preoperative tests before elective surgery?	
Yes	47 (81.03)
No	3 (5.18)
I do not want to but institutional policy mandates	8 (13.79)
Do you feel that routine preoperative test practice should be replaced with patient and surgical characteristics based investigations?	
Yes	44 (75.86)
No	14 (24.14)
What is the current evidence-based recommendation for routine testing	
For it	11 (18.97)
Against it	17 (29.31)
I have not gone through updated recommendations	30 (51.72)
According to you what are the reasons behind ordering routine preoperative tests (multiple options were able to be clicked)	
Institutional policies and procedures	36 (63.16)
Medicolegal worries	36 (63.16)
Concern about surgical/anaesthetic fitness delays	23 (40.35)
Complex health-care environments	12 (21.05)
The difficulty of changing ingrained tradition of routine practice	8 (14.04)
Belief that other physicians/anaesthesiologist want the tests to be performed	12 (21.05)
To detect hidden abnormality which may manifest for first time during perioperative period	38 (66.67)
To get rid of blame and wrath from patient party if investigations are not done and some adverse event occurs	23 (40.35)

n – Number of respondent

The routine practices were higher among surgeons than anaesthesiologists (95.83% vs. 70.59%; $P = 0.018$). Anaesthesiologists were more updated with the current evidence and recommendations as compared to surgeons {47.06% versus 8.33%, relative risk (95% confidence of 1.97 (1.35–2.88); $P = 0.001$)}.

Although there was a good agreement between anaesthesiologists and surgeons for the different reasons cited for continued routine practice, the most common reasons for practising routine pre-operative testing were different among anaesthesiologists and surgeons [Table 2].

DISCUSSION

Our study found that only 5.18% of the participants did not prescribe routine pre-operative tests, despite the existence of recommendations to the contrary being available for nearly 15 years.^[7] This indicates that the guidelines have failed to convince the practitioners. One of the reasons may be the practitioner’s apprehensions and practice environment.

Majority (51.7%) of respondents were not updated with the current recommendations, and nearly one-fifth were not even aware of these recommendations. This indicates that lack of updated information is a contributor to the continued practice. However, the finding that 47.06% practitioners, despite being aware were not willing to follow the recommendations due to the institutes’ protocol, indicates that practitioners are not solely responsible. This is reinforced by another finding of the present survey where 75.86% of the practitioners think that the routine testing should be replaced with patient characteristic-based investigations. Selective testing has shown to reduce consultations, delays and cancellations.^[8] American Society of Anesthesiologists also supported testing

based on risk assessment and opposed to the routine approach.^[9]

The most common reason stated by the participants was to detect a hidden abnormality. A study reviewing data of 46,977 patients from a national database who underwent routine pre-operative testing found that neither laboratory testing nor abnormal results were associated with post-operative complications.^[10] Even abnormal test values found in routine testing among elderly patients failed to predict post-operative complications.^[3] Analysing data from Mayo clinic, it was found that even though routine testing found hidden abnormalities yet, it was possible to eliminate these tests without changing outcomes.^[11]

Two of top three reasons were associated with the administration and law which indicates that even if all the practitioners are updated with knowledge and willing to abandon routine testing, it may still not be possible to eliminate this practice. The current wide prevalence of violence and wrath of patients and their families may also a major contributor. Institutional norms, law and government have their role to play. A previous study conducted with nearly same aims in 2011 had findings similar to our study.^[6]

Anaesthesiologists were more informed and updated with the current recommendations.

Although the study was designed to get adequate power, the non-responders were much more than assumed (70%) leading to relatively underpowered study. The average response rate for online survey is nearly 33%; in the present study, the response rate was 30%.^[12]

Representatives were also from a relatively smaller number of institutes. However, although these issues are limitations of our study, the present survey can serve as a pilot to prepare our further action plan. A nationwide survey can give more accurate values.

Table 2: Reasons cited for continued routine preoperative testing and comparison using Fisher’s exact test (total number)

Reasons for routine preoperative testing	Anaesthetists (n=34), n (%)	Surgeons (n=24), n (%)	P
Institutional policies and procedures	24 (70.56)	12 (50.00)	0.169
Medico legal worries	26 (76.47)	10 (41.67)	0.012
Concern about surgical/anaesthetic fitness delays	9 (26.47)	14 (58.33)	0.028
Complex health care environments	6 (17.65)	6 (25.00)	0.527
The difficulty of changing ingrained tradition	6 (17.65)	2 (8.33)	0.449
Belief that other want the tests to be performed	7 (20.59)	5 (20.83)	1.000
To detect hidden abnormality	21 (61.76)	17 (70.83)	0.579
To get rid of blame and wrath of patient party in case of any untoward event and investigations were not done	14 (41.18)	9 (37.50)	1.000

n – Number of respondent

CONCLUSION

Knowledge of the current recommendations is greater among anaesthesiologists than surgeons. Routine pre-operative testing practice is very much prevalent both among anaesthesiologists and surgeons. The most common reason for routine testing is to detect a hidden abnormality. Medicolegal worries, institutional policy and worsening patient–doctor relationship are also important reasons for the routine preoperative tests.

Acknowledgement

I would like to thank all the respondents who spared their valuable time to take this survey.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Access this article online

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Website:
www.ijaweb.org

DOI:
10.4103/ija.IJA_92_17

How to cite this article: Karim HM. Practice and reasons for routine pre-operative investigations among anaesthesiologists and surgeons: An online survey. *Indian J Anaesth* 2017;61:933-5.

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