AN AUDIT ASSESSMENT OF PREOPERATIVE FASTING FOR ELECTIVE SURGERIES

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ABSTRACT

BACKGROUND

Fasting before elective surgeries is a regularly practiced norm for the past few decades. Preoperative fasting reduces the gastric volume and prevents aspiration during surgery. The guidelines for duration of fasting has been promulgated by the ASA, nevertheless, in practice there are wide discrepancies. This study was done to assess the level of knowledge and practices regarding preoperative fasting among health care providers.

MATERIALS AND METHODS

The doctors and nurses of surgical departments of our hospital were then taken up for the study. A total of 122 health care providers were included in this cross-sectional study, of which 65 were nurses. A structured self-administered questionnaire was used to collect the data regarding fasting times prior to various anaesthesia and fasting times for different food stuffs.

RESULTS

The mean duration of fasting for solids was 12 hours and for liquids was 7 hours. Overall, 49% of the study participants had adequate knowledge on the duration of preoperative fasting. Over 30% of the participants felt that the duration of fasting can be lowered for various types of anaesthesia.

CONCLUSION

There is an imminent need for bringing about a change in the attitudes and practices regarding the preoperative fasting among the health care providers. This study has elucidated the role of anaesthetists in pioneering this change by way of creating awareness and monitoring the implementation of the ASA guidelines in health care practice.

KEYWORDS

Elective Surgery, General Anaesthesia, Preoperative Fasting, Pulmonary Aspiration.

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BACKGROUND

It has been a common practice to prepare patients undergoing elective surgeries with general anaesthesia. Among the several guidelines which include maintenance of blood pressure etc., pre-operative fasting has been an essential procedure. It has been observed that fasting before general anaesthesia reduces the volume and acidity of stomach contents during surgery.^[1] The policy varies from 'nil per oral' approach to restricted fluid intake for few hours before surgery. Fasting from midnight was thought to reduce the risk of pulmonary aspiration and regurgitation. An aspiration as little as 30 - 40 mL can result in significant complications and even death. Several factors including pregnancy, obesity and difficult airway can predispose to aspiration. This emphasises the need for gastric emptying prior to surgeries. Though, there are several regulatory mechanisms like hormonal, neuronal and metabolic feedback, the assessment of residual gastric volume cannot be taken as a gold standard procedure to determine the risk for aspiration.

For pulmonary aspiration to occur, there could be increased regurgitation as a result of gastro-oesophageal reflex, loss of protective airway reflexes and an increase in gastric volume due to inadequate fasting or late emptying. Of the above mentioned risk factors, gastric volume is the only modifiable risk factor.^[2]

It has been universally agreed that pre-operative fasting is a vital procedure to minimise gastric volume; however, the duration of pre-operative fasting has been long departed. The AAGBI, ASA and RCN have given separate recommendation for each type of food. For clear fluids the recommended duration is 2 hours and for breast milk 4 hours; for infant formula, non-human milk and light meal the recommended duration of fasting is 6 hours. When the surgery is scheduled in the morning, the patients are refrained from food intake after midnight. They are encouraged to drink either water or juice at 6 am. No drinks are allowed after 6 am. For surgeries which are scheduled in the afternoon, a light breakfast in the form of bread toast or cereal is allowed up to 7 am. Drinks like water or juice may be encouraged up to 11 am. No milk or milk containing drinks are permitted on the day of surgery.^[3]

It is important that the Doctors and the health care team taking care of the patients undergoing surgeries are aware of these guidelines. The study done by Gunawarthana SAAI showed that the mean duration of fasting was 13.86 hours for solids and 12.68 hours for liquids. A satisfactory level of knowledge was observed in 64.34% of interns and medical officers.^[4] A study done by Ossama Hammdy Salman showed

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the tradition that MPO after midnight was still practiced among 72.3% of practitioners.^[5] Prolonged duration of pre-operative fasting is associated with several complications and risks. The psychosocial impact includes confusion, irritability and social isolation of missing a meal. The physiological impact consists of dehydration, headaches, hypoglycaemia and electrolyte imbalance and vomiting. The study done by Garge Njoroge showed that 29.2% of the patients developed anxiety due to prolonged duration of fasting.^[6]

Objectives

1. To access the knowledge regarding preoperative fasting guidelines.
2. To evaluate the preoperative fasting practices employed in our hospital.

MATERIALS AND METHODS

Study Setting

This study was carried out as a cross-sectional study among the health care providers and patients admitted in our tertiary care hospital in Salem district.

Study Population

The doctors and nurses of surgical departments of our hospital were then taken up for the study. Based on a study done by OH Salman, 62.6% of the health care providers had knowledge regarding pre-operative guidelines.^[5] At 95% level of significance and 9% absolute precision, a sample size calculated was 110.9. Accounting 10% for non-response, the final sample size was calculated 121.9 and was rounded off to 122. Our hospital consists of 250 surgical staffs, of which 100 were doctors and 150 were nursing staffs. A single list consisting of all the 250 staffs were prepared, from which 122 participants were selected by simple random sampling using computer generated random numbers.

Selection Criteria

Doctors and nurses who belonged to surgical department and who consented for the study were included.

Data Collection

A structured self-administered questionnaire was used to collect the data regarding fasting times prior to various anaesthesia and fasting times for different food stuffs. The data regarding fasting practices followed by the health care providers were also elicited.

Data Analysis

Data was entered and analysed using Microsoft Excel Spreadsheet, mean duration of fasting and information regarding knowledge and practices were expressed in percentages.

RESULTS

This study is a cross-sectional study among 120 health care providers of our criteria care hospital. A total of 65 nurses and 57 doctors participated in the studies. The mean duration of fasting for solids was 12 hours and for liquids was 7 hours. The prevalence of adequate knowledge regarding duration of fasting for different food stuffs is given in Table 1. Overall, 49% of the participants had adequate knowledge regarding the duration of fasting.

Sl. No.	Food Stuff	Doctors		Nurses	
		N= 57	%*	N= 65	%*
1	Large meal	7	12.3	21	32.3
2	Slice of toast	48	84.2	44	67.7
3	Tea/coffee/milk	50	87.72	54	83.08
4	Breast milk	23	40.35	23	35.38
5	Clear fluids	43	75.44	33	50.76
6	Tablets with water	15	26.31	23	35.38
7	Chewing gum	15	26.31	12	18.46

Table 1. Prevalence of Adequate Knowledge regarding Duration of Fasting for Different Food Stuffs

*Percentages will not total to 100.

The opinion regarding minimum duration of fasting prior to sedation is given in Table 2. In comparison with the existing guidelines 18% of the doctors, 38% nurses felt that duration should be shorter. About 11% of the nurses and 3% of the doctors felt that there was no need for pre-operative fasting.

Sl. No.	Fasting Prior to Sedation should be	Doctors		Nurses	
		Frequency	%	Frequency	%
1	Longer	8	14	13	20
2	Same	36	63	19	29
3	Shorter	10	18	25	38
4	No fasting	2	3	7	11
5	Nil	1	2	1	2

Table 2. Opinion regarding Minimum Duration of Fasting Prior to Sedation

The opinion regarding minimum duration of fasting prior to spinal anaesthesia is given in Table 3. In comparison with the existing guidelines 18% of the doctors, 11% nurses felt that duration should be shorter. About 2% of the nurses and doctors felt that there was no need for pre-operative fasting.

Sl. No.	Fasting Prior to Spinal Anaesthesia	Doctors		Nurses	
		Frequency	%	Frequency	%
1	Longer	2	4	41	63
2	The same	42	74	16	25
3	Shorter	10	18	7	11
4	No fasting	1	2	1	2

Table 3. Opinion regarding Minimum Duration of Fasting prior to Spinal Anaesthesia

The opinion regarding minimum duration of fasting prior to local anaesthesia is given in Table 4. About 60% of the nurses and 77% of the doctors felt that there was no need for pre-operative fasting.

Sl. No.	Fasting Prior to Local Anaesthesia	Doctors		Nurses	
		Frequency	%	Frequency	%
1	2 hours	3	5	10	15
2	6 hours	8	14	12	18
3	No fasting	44	77	39	60
4	None of the above	2	4	4	6

Table 4. The Knowledge regarding Minimum Duration of Fasting prior to Local Anaesthesia

The knowledge regarding definition of clear fluids was assessed and is given in Table 5. About 2% of the doctors and 28% of the nurses felt that milk is a clear fluid. Similarly, 38.5% of the doctors and 28% of the nurses believed that tea and coffee are clear fluids.

Sl. No.	Name of the Clear Fluids	Doctors		Nurses	
		Frequency	%	Frequency	%
1	Water	56	98	63	97
2	Squash	3	5	4	6
3	Lemonade	27	47	11	17
4	Milk	1	2	18	28
5	Black Tea/ Coffee	22	38.5	18	28
6	Tea/ Coffee with Milk	0	0	2	3

Table 5. Knowledge regarding the Definition of Clear Fluids

The practices regarding duration of fasting for solids and liquids are given in Table 6. In 39% of the patients, fasting for solids was advised between 6 - 10 hours and in 17% of the patients 6 - 10 hours of fasting was advised for liquids.

Sl. No.	Fasting Hours	Solid		Liquid	
		Frequency	%	Frequency	%
1	6 - 10	52	39	23	17
2	10 - 14	47	35	6	4
3	14 - 18	30	22	0	0
4	>18	6	4	0	0

Table 6. Duration of Fasting for Solids and Liquids

DISCUSSION

This study elucidates the need for emphasising the guidelines for pre-operative fasting. Although, the first International pre-operative fasting recommendations was published ASA in 1999. The knowledge regarding these were not disseminated to surgeons or other health care providers. Moreover, several studies have shown a reduced compliance among anaesthetist fraternity.

Our study showed a mean of 12 hours fasting for solids of 7 hours fasting for liquids. A study done by Gunawardhana showed similar results.^[4] In a study done by Abebe et al, the mean duration of fasting was 15.9 and 15.3 hours for solids and liquids respectively, which was higher than our study.^[7] In a study done by Gebremendhn EG et al, the mean duration was even higher, being 19.6 hours.^[8]

Although, the guidelines recommend pre-operative clear fluid intake 2 hours prior to the surgery, the knowledge regarding the definition of clear fluids was lacking among the study participants. Studies have shown discrepancies in the instructions given by anaesthetists and the implementation of this instruction by the nurses in the wards. Several studies have documented the incorrect use of oral fluids prior to the surgery.

In this study, the knowledge/ opinion regarding the duration of anaesthesia for various types of anaesthesia was well analysed. While a majority of the doctors agreed in the existing guidelines, a considerable segment believed in lowering the duration. A sequential analysis in concurrence with the patient's response parameters will give an insight regarding these recommendations.

CONCLUSION

The role of anaesthetist in implementation of the ASA guidelines is larger in the existing scenario. It is essential to create awareness by providing information and education in these practice guidelines to the health care team of the hospitals. The anaesthetists' team should aim at achieving a change in the behaviour through effective communication. This may be done by fixtures, flyers and posters in the wards, display of audit results in the OTs and conducting periodic checks assessments by interrogation with the patients.

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