

Pre-operative fasting - a patient centered approach

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Abstract

Prolonged pre-operative fasting can be an unpleasant experience and result in serious medical complications. The Royal College of Nursing guidelines state a minimum fasting period of six hours for food and two hours for clear fluids, prior to elective anaesthesia or sedation in healthy patients. We audited the Moorfields South Pre-operative Assessment Unit fasting instruction policy to ensure it is clear and in accordance with national guidelines.

A questionnaire assessing the clarity and accuracy of fasting instructions and patient hydration was employed to survey patients undergoing elective anaesthesia or sedation in July 2013 (first cycle) and September 2013 (second cycle). The fasting instruction policy and patient information leaflet were reviewed; they state "nothing to eat or drink from midnight" for morning surgery and "nothing to eat or drink from 7AM" for afternoon surgery.

The 10 patients surveyed in the first cycle reported that the instructions they were given were clear. 70% expressed subjective dehydration and 40% showed clinical evidence of dehydration. The patients had not been encouraged to drink clear fluids up till two hours before surgery. Patients fasted for unnecessarily prolonged periods, the longest of which was 17 hours.

Our interventions were: delivering a teaching session to update staff of current pre-operative fasting guidelines, producing a patient information leaflet that was correct, reader-friendly and comprehensive and displaying posters as a reminder of the updated fasting instruction policy.

The 12 patients surveyed in the second cycle had been encouraged to drink clear fluids up till two hours before surgery. A dramatically reduced 25% expressed subjective dehydration and 25% showed clinical evidence of dehydration. The longest fasting period was reduced to eight hours.

We encourage all hospitals to adopt a patient centered approach to pre-operative fasting, dispelling the "nil my mouth for eight hours" policy, to improve patient wellbeing and satisfaction.

Problem

The Moorfields South Day Surgery medical and nursing staff expressed concern regarding the hydration, wellbeing and comfort of pre-operative patients because they noted that patients admitted for surgery had increasing complaints of dehydration. Patients also questioned the need for the lengthy pre-operative fasting period they had been asked to maintain.

A number of factors were likely to have further contributed to the patients' dehydration and discomfort from fasting. Firstly, as the majority of surgery carried out in the department is day-case, intravenous fluid replacement therapy is rarely offered in the unit. Secondly, the unit operates a morning and afternoon surgery session and so despite being admitted early, patients may have their surgery much later on, further prolonging their time without food and drink. Lastly, the hot summer months when the problem was noted meant that patients were increasingly more in need of fluid replacement. These reasons reinforced the importance of addressing the problem.

Background

Pre-operative fasting, defined as the restriction of food and fluid intake prior to general anaesthesia or sedation, is vital for patient safety. Induction of anaesthesia or sedation results in a depression of the gag, cough and swallow reflexes that normally protect the airway, placing patients at risk of pulmonary aspiration, pneumonia and even death should regurgitation or vomiting of gastric contents occur (1). Therefore, for many years pre-operative patients were restricted from food and drink for periods of eight to 12 hours before induction of anaesthesia or sedation.

Despite the clear importance of accurate pre-operative fasting, prolonged fasting may be an unpleasant experience causing distress, fatigue, irritability and medical complications, such as dehydration, biochemical imbalance and hypoglycaemia (2). Studies in the literature have shown that reduced pre-operative intervals are safe for the patient, whilst also improving patient hydration and comfort. With the objective of balancing patient safety with patient comfort, The Royal College of Nursing published comprehensive guidance in 2005 taking into account all of the available evidence. The American Society of Anaesthesiologists, Royal College of Anaesthetists, Pre-operative Association and the British Association of Day Surgery, Association of Paediatric Anaesthetists of Great Britain and Ireland and the Royal College of

Midwives, support their guidance policy and have produced similar guidelines.

Meta-analysis of randomised controlled trials have shown that intake of clear fluids up till two hours before induction of anaesthesia or sedation is safe (3), improves patient wellbeing and reduces post-operative nausea and vomiting (4). The volume of fluids does not appear to have an impact on patients' residual gastric volume and gastric pH (5), therefore, patients may have unlimited amounts of water and other clear fluids up to two hours before induction of anaesthesia or sedation (2).

A randomised controlled trial comparing a light breakfast consumed an average of less than four hours before a procedure with overnight fasting reported equivocal findings in gastric volume and pH levels for adults (6). The American Society of Anaesthesiologists expert panel and the guidelines conclude that intake of a light meal six hours or more before induction of anaesthesia or sedation is safe (3,7). There should not be consumption of solids, milk and milk-containing drinks, chewing gum and sweets for six hours prior to induction of anaesthesia or sedation (2).

Baseline Measurement

In order to assess whether the fasting instruction policy in the Moorfields South Pre-operative Assessment Unit (PAU) was in accordance with the guideline recommendations, the verbal and written instructions were reviewed. The patient information leaflets state: "nothing to eat or drink from midnight" for morning surgery and "nothing to eat or drink from 7AM" for afternoon surgery. The nursing staff used this leaflet and the advice on it as a basis for the discussion with the patient. Clearly, these instructions do not comply with the guidelines.

A qualitative and quantitative questionnaire assessing the clarity and accuracy of fasting instructions and patient hydration was designed. Hydration was assessed subjectively by asking patients about their hydration and objectively by assessing for clinical signs of dehydration, such as fatigue and dry mucous membranes.

In the first audit cycle, all patients undergoing elective general anaesthesia or sedation were surveyed in July 2013 over a two-week period. To minimise observation bias, data collection was carried out by student nurse LH and not the author.

The 10 patients surveyed reported that the instructions they had been given were clear. 70% expressed subjective dehydration, answering "yes" when asked "could you do with a drink now?" and scoring 8, 9 or 10 on a scale of 0 – 10 when asked to rate how dehydrated they felt (0 corresponding to not at all and 10 corresponding to very much). 40% showed clinical evidence of dehydration, either with signs of dry mucus membranes or feeling thirsty and fatigued. The patients had not been encouraged to drink clear fluids up till two hours before surgery and were without food and drink for unnecessarily prolonged periods, the longest of which was 17 hours, another of 14 hours and another of 12 hours.

Design

Following a discussion with the PAU medical and nursing staff and ward managers, it was agreed that as a first step, two interventions were required, as outlined below. These interventions were to be put in place immediately, over a period of four weeks.

Interventions required:

1 – A teaching session for the PAU healthcare professionals whom regularly provide patients with their pre-operative fasting instructions. The session would aim to summarise the audit, provide updated fasting instruction recommendations according to published guidelines and act as a forum to discuss clear ways of communicating the instructions to patients.

2 – Replacement of the fasting instruction patient information leaflet with a leaflet that is up to date, reader-friendly and comprehensive, helping to ensure that patients are receiving evidence-based information that is easy to understand and follow.

Strategy

PDSA cycle 1 – A new patient information leaflet was written according to the Royal College of Nursing guidelines. It was presented to various consultant anaesthetists and the PAU staff. A number of suggestions for improvement were made regarding the content and aesthetics of the leaflet.

PDSA cycle 2 – In response to the feedback, the wording of the leaflet was revised, the font was increased and the Moorfields South Hospital logo position was changed. The revised version was presented to the consultant anaesthetists and PAU staff and it was approved for use.

PDSA cycle 3 – Prior to the official replacement of the leaflet, an introduction to the new leaflet and the new instructions to be given to patients was deemed to be necessary for successful implementation. A teaching session was designed and delivered to the PAU staff to discuss the audit, the fasting instruction guidelines, the new leaflet and clear ways of communicating instructions to patients.

PDSA cycle 4 – The leaflets used previously were discarded and officially replaced with the re-designed leaflet. Staff confidently explained the fasting instructions verbally to patients and provided them with leaflets.

It was recognised that some staff members were unable to be attend the teaching session due shift patterns, leave and other commitments. It was important to update them and to achieve this, an informative e-mail containing an audit summary and a copy of the new leaflet was sent to all PAU staff members. This was effective as it allowed staff to familiarise themselves in their own time and have a copy for reference.

PDSA cycle 5 – In order to provide a reminder for existing and new

staff joining the department, two posters were designed and are displayed in the PAU. The posters outline the fasting instructions to be used and remind staff to provide patients with leaflets.

The re-audit was carried out two months following the implementation of the above.

Results

In the second audit cycle, student nurse LH surveyed 12 patients in September 2013 over a two-week period. The results were encouraging.

All patients reported that the instructions they were given were clear. Furthermore, all patients had been encouraged to drink clear fluids up till two hours before surgery – although 20% of patients did not comply with this, there remains an element of choice. When asked “could you do with a drink now?” 75% answered “no” compared with the 70% who answered “yes” in the first cycle. Furthermore, when asked to rate how dehydrated they felt on a scale of 0 – 10, 75% gave a score of 0, 1, 2, 3 or 4. The longest period without food and drink was 12 hours – however, this was observed in a patient who had forgotten that they were having an operation. Aside from that, the longest fasting time was reduced to eight hours in two patients. These three patients (25%), showed signs of clinical dehydration compared with 40% in the first cycle.

Lessons and Limitations

It is important to highlight that the published pre-operative fasting guidelines are recommendations for best practice as opposed to rules, for “healthy” patients. For some patients or departments these guidelines will not apply and may need to be modified or even rejected. Staff and institutions should be aware of this flexibility and be confident in recognising patients in whom the guidelines will not be suitable and adopt a local policy. Specialist opinion, for example from the anaesthetic team, should be sought.

The previous fasting instruction policy was easy to explain by staff and easy to remember and follow by patients. As the updated policy is more complex, staff must remain motivated and trained in communicating the instructions well. They must remember to provide patients with written information helping them to remember the instructions.

Some healthcare professionals were initially reluctant to alter a policy that had been in place for many years and had adequately ensured patient safety (if perhaps not comfort). Communication with the multidisciplinary team was vital in minimising this resistance; general and ward managers, nursing staff and consultant surgeons and anaesthetists were kept informed at each stage of the project, allowing for constant feedback.

The sample size in the audit cycles is small, owing to the fact that the majority of surgery carried out in the department is performed under local anaesthesia. Furthermore, only one re-audit following the interventions has been carried out to date. For these reasons,

there is a chance that the improvement shown in the re-audit could have occurred by chance. To ensure there is a sustained improvement, we will re-audit in July 2014 and the nurse manager has been appointed to supervise correct and adequate continuation. The nurse manager was also provided with the leaflet templates; should further guideline revision be necessary.

Conclusion

The first audit cycle revealed that the Moorfields South PAU pre-operative fasting instruction policy was not concordant with national guidelines, having a serious impact on the patients. Patients were fasting for inappropriately prolonged intervals, leading to both subjective and objective dehydration and discomfort. The introduction of a re-designed patient information leaflet and a teaching session regarding the current guidelines for pre-operative fasting was effective, leading to dramatic improvements in patient hydration as demonstrated in the second audit cycle.

Practicing an evidence-based and patient centered approach to pre-operative fasting improves patient comfort and satisfaction. Correct fasting instructions will diminish the need to cancel or delay surgery due to incorrect fasting intervals, reduce medical complications and improve post-operative wellbeing. Healthcare professionals must be taught accurately and remain updated so that the policy of “nil my mouth for eight hours” is no longer practiced. We encourage all departments and hospitals to audit their fasting instruction policy; helping to ensure that best practice is followed.

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Declaration of interests

Nothing to declare.

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