SECTION C

NUTRITION

IMPROVING THE PRACTICE OF NASOGASTRIC FEEDING IN ST. LUKE'S HOSPITAL

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Introduction

Nasogastric feeding is a very safe and cost-effective way of treating the frequently encountered state of malnutrition of hospitalised patients. The procedure used to insert the tube and the follow-up care and monitoring of the tube-fed patient are the most important aspects that, if performed appropriately, render this artificial form of nutritional support so advantageous for the medical staff and the patient.

This project is intended for use as a guideline for nasogastric tube feeding, that is, the ideal way of carrying out nasogastric feeding, providing nutrition with the least discomfort to the patient.

Methodology

A study was carried out to establish the current practice of nasogastric feeding in the wards of St. Luke's Hospital; in another study some ward nurses were interviewed to evaluate their knowledge about nasogastric feeding.

During the first study, wards M3, M4, M8, MS1, WS1 were visited daily in order to establish any existent problems associated with the whole process of nasogastric feeding, starting from nutritional assessment of the tube-fed patient to the tube insertion technique, patient monitoring, adverse effects and administration of medications. The patients' energy requirements were calculated and compared with their actual intake, and an attempt to monitor the patients' gain or loss of weight was also made by measuring the middle arm circumference. During these visits other patients who were possible candidates for tube feeding were also made by measuring the middle arm circumference. During these visits other patients who were possible candidates for tube feeding were also checked for.

For the second study, the nurses' knowledge was evaluated by carrying out interviews to the nurses of wards M1 to M8, MS1 and WS1. Seven questions were asked including some important aspects of nasogastric tube feeding, such as nutritional assessment, the tube insertion procedure, patient monitoring, adverse effects administration of medications via the tube and drug-nutrient interactions.

Results

Several problems regarding nasogastric feeding were found, which could lead to failure of nutritional therapy and some unwanted effects. No nutritional assessment is performed prior to commencement of nasogastric feeding and such a practice not being carried out led to insufficient caloric supply in at least 50% (n=3) of the patients being enterally-fed during the study. Some of the investigated patients were fed hospital-made diets, instead of a commercial feeding formula. Another observation made during this study was that Ensure is the only feeding formula available in the hospital. All the patients on this liquid formula were administered the feed by bolus feeding, whereas it should have been given at a slower rate.

Another problem is the use of Ryles tubes. These tubes have several disadvantages when compared to the modern fine bore tubes. In fact 66% (n=4) of the nasogastrically-fed patients removed the tube at least once, confirming the discomfort that Ryles tubes cause to the patient.

An important aspect of the tube insertion procedure is the confirmation of the tube's position. The method used locally is auscultation, however, this is unreliable in comparison to other methods, such as aspiration of gastric contents and radiology. It was also noticed that the patients' position was incorrect, being supine.

Another important aspect is that of patient monitoring. This is not done in an appropriate way in St. Luke's Hospital, the required biochemical and haematological tests not being carried out frequently enough, and the anthropometric tests not done at all, except for the patient's weight on admission to the ward.

During this study the surgical wards MS1 and WS1 did not have any tube-fed patients, and the impression was that nasogastric tube feeding is not very common in these wards.

As regards the study evaluating the nurses' knowledge about nasogastric feeding, the study group comprised 42 nurses, and the results show that:

i) 65% (n=27) knew about nutritional assessment, 25% (n=11) did not know about it and 10% (n=4) said that it is not required at all;

ii) all the nurses knew about auscultation, but only 12% (n=5) knew also about gastric aspiration and radiology, and 14% (n=6) knew also about gastric aspiration;

iii) 73% (n=31) did not know about patient monitoring, while 27% (n=11) had some knowledge, even if quite limited;

iv) 88% (n=37) would use weight as an anthropometric parameter to monitor the patient, while the remaining 12% (n=5) did not know about any;

v) the nurses had a good knowledge about possible adverse effects, with three groups of 29% (n=12), 33% (n=14), and 38% (n=16) all mentioning diarrhoea and tube displacement together with dehydration, mucosal damage and pain, and constipation respectively;

vi) all the nurses were well informed about administration of medications via the tube;

vii) only 12% (n=5) of the nurses knew about the possibility of drug-nutrient interactions, but still could not give any examples.

Discussion

Nutritional assessment determines a patient's present nutritional status and can help identify treatment goals, so if it is omitted it increases the possibility of malnutrition and prolongs patient hospitalization. The hospital-made diets used with these patients pose several disadvantages, such as settling down of food, decreasing or stopping the flow, and more importantly microbial contamination of the feed.

Ensure is a hyperosmolar solution (470mOsm/kg of water), implying that it should be administered over a long period of time, not by bolus feeding as done locally, putting the patients at an increased risk of diarrhoea.

Ryles tubes are well known to be the possible cause of reflux and aspiration of food and mucosal damage. Such problems could be easily avoided by replacing these old-fashioned tubes by the modern narrow bore tubes. When confirming the tube's position by auscultation, sound could still be transmitted by a tube inadvertently placed in the bronchial tree, making such a method unreliable. Hence, it should be replaced by others, like gastric aspiration and radiology.

It is of extreme importance that a tube-fed patient be monitored adequately. The tests used would confirm a correct nutritional therapy,

or indicate in which way any modifications should be done to optimize nutritional support.

It is well known that surgical patients are one of the main indications of nasogastric feeding. So it should be a rare event to find the two surgical wards investigated without tube-fed patients. The reason behind this could be fear of causing physical or psychological distress to the patient, making the parenteral route preferable. However, it should be kept in mind that parenteral and enteral nutrition are complementary and not competitive, and that enteral nutrition has less serious adverse effects when compared to parenteral nutrition.

The results obtained from the nurses' interviews indicate that the nurses are not completely confident with some of the most important aspects of nasogastric feeding. It can be observed that the knowledge about the confirmation of the tube's position, patient monitoring and drug-nutrient interactions is quite limited. However, the nurses have show to be well informed about adverse effects and administration of medications through the tube, and to a lesser extent about nutritional assessment.

Conclusion

Obviously there is much room for improvement in the hospital wards, starting from the institution of nutritional assessment, replacement of hospital diets by commercial feeding formulas, and making different types of feeding formulas available instead of the single use of Ensure. Improvement would also be obtained if the Ryles tubes are completely replaced by narrow bore tubes, and by performing the tube insertion technique and feeding procedure in the appropriate way. This should also include close patient monitoring performed on a regular and well established basis.

Ideally all types of enteral feeding should be managed at least on a consultative basis by a nutrition team. Where such a team does not exist officially, as in the case of St. Luke's Hospital, there needs to be communication between all those directly involved with the patient's management at ward level, the five most important people on the team being the patient, the nurse, the dietician, the doctor and the pharmacist. The main role of the pharmacist is to give advice about drug-nutrient interactions, administration of medications via the tube, selection and supply of the appropriate formula and advice about patient monitoring.

Educating the ward nurses about enteral nutrition is an important step to be taken towards the improvement of the practice of nasogastric feeding in St.Luke's Hospital. The nurse is the closest professional directly involved with the patient and can take immediate action once a problem arises. Appropriate educational programmes and post-graduate studies about nutritional services would certainly be beneficial to both the nurse and the patient.

Once these problems are tackled, nasogastric feeding in St. Luke's Hospital would certainly be an extremely safe and cost-effective method of nutritional support.

References

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