Issue 6

NIBBLE

Critical Care Nutrition

Nutrition Information Byte (NIBBLE)

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Planning for Enteral Nutrition Interruptions

One of the established barriers to optimal delivery of EN is interruptions to delivery of the feeding solution for expected and even unexpected procedures. From reports in the literature and survey data this is consistently identified as a barrier to reaching nutritional goals for the critically ill patient.

For the patient who is to go to the operating room for a procedure this boils down to a balancing of two different risk minimization strategies. The risk as seen from the Intensive Care Unit's (ICU) perspective is the inadequate delivery of nutrients. This becomes an issue because patients are placed "NPO", which means all enteral intake is stopped including feeding through a gastric tube or a tube within the small bowel. Sometimes this will also mean that their enteral medications are held. On occasion this may mean nutrients are stopped and the patient is held fasting for a few hours. However, if the patient does not have a scheduled time for the procedure the fasting period may go on much longer, even for days. If it becomes obvious the procedure will not be completed on the expected day the patient may be ordered to resume feeding and start fasting again at midnight only to have the whole process start again. Over the course of a few days the patient may be starved for extended period of time and accumulate a significant caloric debt (see NIBBLE on "Avoiding Caloric Debt").

The risk from the perspective of the surgical team and specifically the anesthetist is one of aspiration associated with induction of anesthesia and intubation. The guidelines developed by the American Society of Anesthesioolgy are commonly used within the anesthesia community and referred to in making decisions about fasting periods prior to a procedure. These guidelines are available at: http://www.asahq.org/publicationsAndServices/~/media/For%20Members/Practice%20Management/PracticeParameters/Preoperative%20Fasting_Pharmacologic%20Agents.ashx

One of the purposes of the guidelines is to reduce the severity of complications related to perioperative pulmonary aspiration of gastric contents. The application of the guidelines is directed to healthy individuals undergoing elective procedures. The guidelines address the issue of the ingestion of clear fluids and solid foods separately. They indicate that "It is appropriate to fast for the intake of clear fluids at least 2 hours before elective procedures…" . It is also stated in a separate part of the guideline that "It is appropriate to fast from the intake of solid food or non-human milk products for at least 6 hours before elective procedures….". The guidelines do not address the issue of possible excessive fasting if there is delay in performing a procedure.

The patient in the ICU often has a one significantly different condition than the individual presenting for an elective procedure. They are often already intubated and are receiving a level of sedation or anesthesia. Therefore the risk of induction of anesthesia and securing an airway has already been realized. In addition, they often have a tube in the stomach that is used for feeding or decompression and can be used for decompression as needed. Some of the patients will be receiving feeds through a feeding tube that is distal to the pylorus and not receiving any feeding into the stomach and my even have the stomach continuously decompressed.

As a result of these considerations it is appropriate to consider a different process than having all intubated critically ill patients starving indefinitely prior to a procedure being done in the operating room. For patients that are being transferred to the OR for a procedure not related to the aerodegestive tract there should be no fasting period before they go to the OR. An example of such a patient is one who going to have nailing of a femoral fracture. It may be appropriate to stop the feeds just prior to leaving the ICU. Two reasons to do this are to simplify the pumps that need to be managed by the anesthesia team and reduce the risk of regurgitation as the patient will not be in the semi-recumbent position in the OR. However, if an insulin infusion is running this will need to be addressed by stopping the insulin or adding in parenteral glucose to avoid intraoperative hypoglycemia. This strategy can be applied to patients being fed into the stomach and those being fed distal to the pylorus.

For patients having surgery to the aerodigestive tract there should be a discussion between the surgical team and the ICU team as to the appropriate strategy for addressing the feeds, which will be modified based on the anatomy of the planned site of surgery and the nature and location of the enteral nutrition.

A set of guidelines that was developed and implemented in Edmonton, AB and subsequently modified and adapted in Kingston, ON can be found in the ToolKit of our website: http://www.criticalcarenutrition.com/index.php?option=com_content&view=category&layout=blog&id=18&Itemid=19#bedside

The process by which you adopt such a guideline is an important issue. It will be imperative to engage a leader in your Anesthesia department. This may be best achieved by a medical leader within the ICU. If the two groups can agree on the principals and then work details of a standardized guideline it will allow more streamlined implementation for your critically ill patients.