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The Process of Transitioning to Oral Feeding

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This blog will discuss the process for transitioning from total parenteral nutrition (TPN) to oral feeding when starting chyme refeeding. It will cover why a patient needs to start oral feeding, how to start oral feeding, and what will happen when they do start oral feeding.

The use of TPN is vital in stabilising a patient that has had a catastrophic abdominal event that has led to intestinal failure.[1] TPN provides complete nutritional support to a patient when they are unable to eat or have anything pass through the gastrointestinal system.[1] However, TPN has many risks and possible complications that can arise from sustained use, not to mention the cost, which prompts the return to oral feeding as soon as clinically indicated.[1]

One of the key risks associated with TPN stems from the fact that it must be administered via a central intravenous (IV) catheter which increases the risk of an IV line bacteraemia.[1] Sustained use of TPN also leads to cellular changes in the intestinal tract due to the absence of food/chyme and processing of nutrients that not only sustain the body but the health of the intestinal tract.[1]

The three most common complications that can arise from sustained use of TPN are:

1. Intestinal mucosal atrophy due to the absence of nutrients[1]
2. Loss or reduction of diversity of the gut microbiome and the number of physiological processes that they maintain[1]

3. The loss of the circulation of bile acids which can lead to cholestasis, steatosis, causing fibrosis of the hepato-biliary tract[1]

It has been shown by starting enteral or oral feeding, all these complications are removed, and restoration of a healthy intestinal tract can be achieved within as little as two weeks.[1,2]

Irrespective of how long a patient has been nil by mouth, restarting oral feeding needs to begin slowly and with a low residue diet so as to not overwhelm the gut microbiome. Oral feeding can start once the patient has been started on chyme refeeding. Starting with small meals that are easy to digest for the patient will reduce the nausea and bloating that may arise.

With the introduction of oral feeding, a patient's output through their enterostomy or entero-atmospheric fistula (EAF), will increase. This is because along with the food that is being consumed, 3000 to 4000ml of digestive enzymes (gastric acid, bile, and pancreatic enzymes) are being produced and secreted into the intestine to breakdown and aid in the absorption of the nutrients being consumed.[2] Having small meals will keep the increase in output from the enterostomy or EAF to a minimum so to not overwhelm the patient, the ostomy appliance, or increase the net losses being discarded from the ostomy appliance.[1]

Slowly increasing the amount and frequency of chyme being refed is necessary for patient tolerance to chyme refeeding and rehabilitating the bowel. By slowly increasing oral feeding and slowly titrating the amount of chyme being refed in combination, the gastrointestinal system will rehabilitate without being overwhelmed.

Chyme refeeding increases the length of bowel available for nutrient absorption and as such, while the bowel is being rehabilitated with oral feeding and chyme refeeding, the reliance on TPN will be reduced and the patient will be able to be transitioned off (T)PN over a short period of time.

References

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