Title: Study of Nutrition in Acute Pancreatitis (SNAP) A Multicenter Study

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Purpose of Research

The goal of this research is to see which form of feeding is better by studying a large number of patients with your illness in 9 different centers around the country, comparing how long it takes for your illness to subside and how long you will be in hospital. We know from previous clinical studies that the best way of feeding you during this illness is by a small tube which passes through your nose and into your intestines. However, we do not know whether it is better to feed you by tube into your stomach (nasogastric (NG) feeding), or further down into your intestine (duodenal jejunal (DJ) feeding). Both forms of feeding have potential benefits: NG feeding because it is more comfortable for you and easier for us to insert the tube resulting in earlier feeding, DJ feeding because it may deliver more nutrition and avoids stimulating your pancreas. Both forms of feeding will be closely monitored to see how well you tolerate the feeding and how soon your disease settles down so that you can resume normal feeding.

Since no one knows yet whether it is better to feed you through the feeding tube through your nose that either reaches your stomach (NG feeding tube), or one that is a little longer that reaches the intestine (a DJ feeding tube), not everyone in the research study will be treated with same tube. Each volunteer in the study will get either the NG feeding tube or the DJ feeding tube. The decision as to whether you are treated with the NG feeding tube or the DJ feeding tube will be made by chance, like the flip of a coin, not by your doctor or based on your medical condition. Neither you nor the doctors will be able to decide which tube will be inserted. You have a 50/50 chance of getting either tube inserted. This way of studying feeding tubes provide more objective information about the tubes and allows better comparisons to be made.

Inclusion Criteria:

1. Patients over the age of 18yr
2. The typical history of abdominal pain for over 24h with raised (>3-fold) serum pancreatic enzymes on admission
3. Severe pancreatitis, as defined by: the Atlanta classification of severe disease, but with important modifications to sharpen the definition of severity, to include one or more of the following:
   a. The presence of organ failure (MOF) resistant to early aggressive IV fluid resuscitation as defined by a Marshall score of ≥2 in any one organ, excluding the liver component as the abnormality may be due to gallstones rather than the systemic inflammatory response
   b. Pancreatic necrosis >30% on CT scan or a modified CT severity index (CTSI) of ≥8
   c. APACHE score ≥8
   d. Ranson's criteria ≥3

Exclusion Criteria:

1. Inability to absorb enteral nutrients resulting in chronic intestinal failure and need for IV feeding, such as short bowel, malabsorption disorders such as celiac or intestinal proliferative disorders, chronic obstruction and pseudo-obstruction.
2. Time elapse since commencement of acute pancreatitis symptoms >168 hours. In order to take advantage of the 'window of opportunity' to prevent the progression of 'transient' MOF to 'permanent' MOF, patients should be started on enteral feeding as soon as possible. However, in practice many patients present
initially with mild disease which progresses to severe necrosis at the end of the first week, and these patients need nutritional support for long periods of time. Consequently, this is an important group to include in this investigation. Post hoc analysis will be performed to see whether they behave differently to patients fed earlier in their disease.

3. Any form of artificial (enteral) feeding since commencement of acute pancreatitis symptoms

4. Patients with chronic pancreatitis and pancreatic insufficiency requiring pancreatic enzyme supplements, based on clinical history and specific investigations such as by ERCP, MRP, or CT scanning.

5. Pre-existing chronic renal insufficiency requiring hemodialysis or peritoneal dialysis, as this will make assessment of severity difficult

6. Pre-existing end-stage liver disease with ascites, coagulopathy and encephalopathy, supported by biopsy, and/or radiological imaging and endoscopy (portal hypertension, varices and gastropathy), as this will make assessment of severity difficult

7. Chronic immunodeficiency states such as AIDS defined by CD-4 count < 50, and immunoglobulin deficiencies as it may independently affect feeding tolerance and infection risk

8. Pancreatic cancer proven by biopsy, and any other form of cancer with life-expectancy <6 months.

9. Current somatostatin or corticosteroid therapy as these drugs will impair intestinal, metabolic, and immune function, and therefore affect absorption and infection risk.

10. Contraindication to using the nose for enteral tube insertion

11. Severe traumatic brain injury with ICP>20mmHg despite treatment

12. Previous completion or withdrawal from this study