Pancreatic Cancer Academy

Pancreatic Enzymes in Daily Practice

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PANCREAS CANCER ACADEMY

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Declaration of conflict of interest:

I have no commercial disclosure

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Overview

Pancreatic enzyme replacement therapy:

- Who?
- Why?
- What?
- When?
- How?

- Nutrition support

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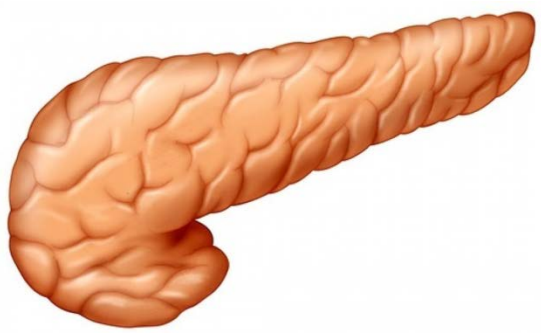
The Pancreas and Nutrition

The pancreas is an elongated gland located behind the stomach which contains 2 types of tissue:

- Exocrine tissue: produces digestive enzymes that are secreted into the small intestine
- Endocrine tissue: produces hormones insulin and glucagon which manage our blood glucose levels

- Over 95% of pancreatic cancers are adenocarcinomas of the exocrine pancreas.



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Pancreatic enzyme insufficiency (PEI)

- Defined as the condition in which the amount of secreted pancreatic enzymes is insufficient to maintain normal digestion

- **Affects 80–90% of patients with pancreatic cancer** (Keller & Layer 2005)
- Affects 55-100% of patients following pancreatic head resection (Keller & Layer 2005, Jang et al 2002, Yusua et al 2012)
- Affects 19-80% of patients following distal pancreatectomy (Ianono et al 2013, Belyave 2013, Yusua et al 2012)

❖ Results in malnutrition!!

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Pancreatic Enzyme Replacement Therapy (PERT): Who?

- Started on diagnosis of pancreatic cancer and may also be needed after surgery

- Symptoms of malabsorption:

- Pale, loose floating stools
- Difficult to flush/ offensive smelling
- Yellow or orange colour stools/ oily
- Wind, bloating, abdominal gurgling/cramps, nausea Vitamin deficiencies
- Unintentional weight loss

However… these symptoms can often be masked by other medications and self imposed fat restrictions

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PERT: Why?

- PERT helps to improve:
  - absorption of macro and micronutrients
  - symptoms
  - nutritional status
  - quality of life
  - tolerance to treatment
  - survival

(Bruno et al 1998, Davidson et al 2004, Domínguez-Muñoz JE et al. 2018)

- In patients with unresectable pancreatic cancer and significant weight loss at diagnosis (>10% bodyweight within 6 months), **PERT was associated with longer survival** (Domínguez-Muñoz JE et al. 2018)

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PERT: What is it?

- Pork based enzyme replacement:

– Creon (10,000, 25,000, 40,000 units)
– Nutrizym 22 (22,000 units)
– Pancrex V Capsules, powder or granules

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What Dose?

- Depends on the patient and the meal

- Starting dose:
  - 75,000 lipase units with meal
  - 50,000 with snack (at least, likely need more!)
  - PPI may be needed (reduced bicarbonate production)

(Dominuquez-Munoz, 2018)

- Richer/fattier meals may need more

- Not a maximum dose

- Monitor tolerance at this dose and increase as needed

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When and how to take PERT?

- At the start of or during meals, snacks or milky drinks
- With a cold drink
- Do not chew/ crush
- Spread throughout larger meals
- If taking a multivitamin, take with the enzymes
- Self medicating on the ward is generally encouraged

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Monitoring

Any improvement in symptoms and weight?

If not, consider:

- Storage, timing, brand of PERT
- Need to increase dose further?
- Need a proton pump inhibitor? Take twice daily instead of once daily?
- **If constipated, start laxatives rather than decreasing PERT dose**

- **If ongoing symptoms and on high dose of PERT, consider other causes such as bacterial overgrowth, bile acid malabsorption, Abx related diarrhoea, treatment related diarrhoea, IBS, IBD, coeliac, lactase deficiency, dumping syndrome**

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Why is good nutrition important?

- Reduces the risk of developing cancer
- Maintain the body's store of nutrients
- Maintain weight
- Maintain strength & energy
- Prevent or reverse nutritional deficiencies
- Maximize quality of life
- Helps the immune system to function more effectively
- Improves tolerance to cancer treatments & their related side-effects
- After cancer treatment, it helps reduce the risk of new cancers and other diseases

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Malnutrition

- Pancreatic cancer and its treatments including surgery can result in malnutrition.

- **80-85%** of patients with pancreatic cancer are thought to be malnourished (Okusaka et al. 1998, Bachman 2009, Ronga et al. 2014)

- **1 in 3 patients have lost >10% of body weight at diagnosis** (Davidson et al, 2004)

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Nutrition Support

- **Oral nutrition support** (food first approach, if gut is working)

- **Enteral nutrition:**

- Nasogastric feeding (take PERT orally if possible)
- Naso-jejunal feeding (if gastric outlet obstruction, PERT via feeding tube)

- **Total parenteral nutrition** (via the bloodstream, high infection risk)

- Inadequate or unsafe oral and/or enteral nutritional intake
- A non-functional, inaccessible or perforated gastrointestinal tract)

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Oral nutrition support

- Encourage high calorie and protein meals/snacks
- Food fortification
- Symptom control
- Eat small amounts regularly
- Modified texture diets for patients with obstructions or stents
- Specific advice on symptoms e.g. constipation, diarrhoea, nausea
- Oral nutritional supplements
- Micronutrient supplementation

❖ PERT doses may need to be adjusted around meal patterns and supplement drinks

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PERT and Enteral Feeding

- Peptide feed (ESPEN 2006)
- Depends on tube size and location
- If gastric feeding and can take orally, then oral PERT
- If feeding into jejunum or can’t swallow, then need PERT powder eg Pancrex V
- 1g of Pancrex V powder dissolved in 10-20ml water flushed down the tube once every 1-4 hours.
- Avoid giving medications or large water flushes with Pancrex V as this dilutes the enzymes
- Note Pancrex V powder should be stored at <15°C
- If eating then will need additional oral PERT for any food consumed

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Thank you for listening….

Any questions?

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