Chronic Pancreatitis in Central Australia

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Agenda

1. Background
2. Nutritional Management
3. Case Study

What is Chronic Pancreatitis?

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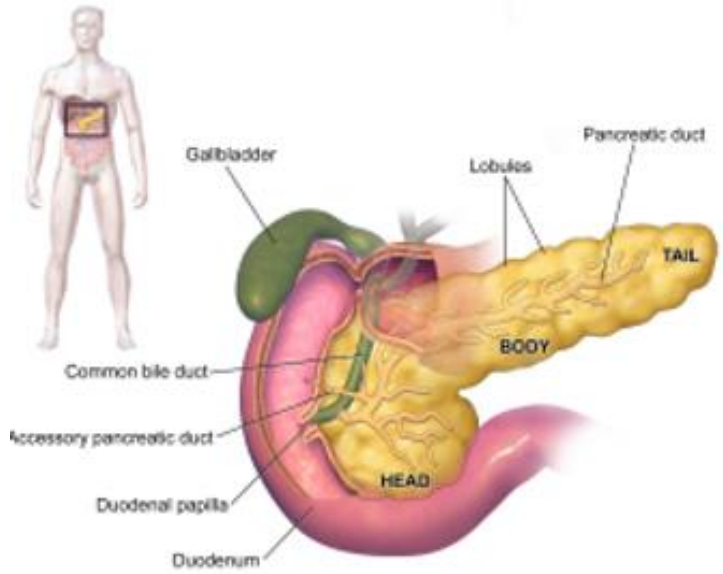
Definition

“Chronic pancreatitis is a disease in which recurrent inflammatory episodes lead to a replacement of the pancreatic parenchyma by fibrous connective tissue. The major consequence is the loss of functional exocrine and endocrine pancreatic tissue, thus resulting in both exocrine and endocrine insufficiency.” – ESPEN



Arvanitakis, M. *et al*, 2020

NORTHERN TERRITORY GOVERNMENT

Prevalence in Central Australia

Pancreatitis and post-pancreatitis diabetes in Central Australia

Mary M Wicks [1], Elizabeth L M Barr [2 3], Louise Maple-Brown [2 4]

Affiliations + expand

PMID: 34779564 DOI: 10.1111/imj.15620

Abstract

Background: Pancreatitis and diabetes are common among Aboriginal people of Central Australia. The contribution of pancreatitis to the development of post-pancreatitis diabetes mellitus (PPDM) is not known.

Aims: To describe among Aboriginal and non-Aboriginal people living in Central Australia, (i) the prevalence and aetiology of acute (AP) and chronic pancreatitis (CP), and (ii) diagnosis of new onset diabetes after pancreatitis.

Methods: Retrospective medical record review of patients ≥15 years admitted to hospitals in the Central Australia Health Service between 2009 and 2018 with pancreatitis. Prevalence as a proportion of the resident population and aetiology of AP and CP were determined. Diagnosis of new onset diabetes after admission with pancreatitis was assessed.

Results: Of the 638 patients assessed, 73% were Aboriginal and 48% female. The annual prevalence in 2009 and 2018 for AP was 171 and 203 per 100 000 persons, and for CP was 206 and 114 per 100 000 persons respectively. Rates were high in Aboriginal people. Alcohol aetiology was most common in Aboriginal people (66%) and biliary aetiology in non-Aboriginal people (37%). A diagnosis of diabetes after pancreatitis was detected in 125 (29%) of 438 patients who did not have a diabetes diagnosis previously recorded, and 20 of the 22 tested for diabetes-associated antibodies were negative, fitting criteria for PPDM.

Conclusion: Prevalence of AP and CP in Central Australia was higher in Aboriginal than non-Aboriginal people. Few patients with diabetes recorded after pancreatitis had appropriate PPDM diagnostic testing. Interdisciplinary education on the diagnosis of PPDM is required.

Keywords: Northern Territory; diabetes; exocrine pancreas; indigenous health; pancreatitis.

Wicks, M.M., *et al*, 2022

NORTHERN TERRITORY GOVERNMENT

Common Symptoms

- Abdominal pain
- Post prandial abdominal pain
- Diarrhoea
- Undigested fat in stool- loose, pale, greasy, offensive smelling, explosive
- Nausea
- Vomiting
- Weight loss

Pham, A. *et al*, 2018

NORTHERN TERRITORY GOVERNMENT

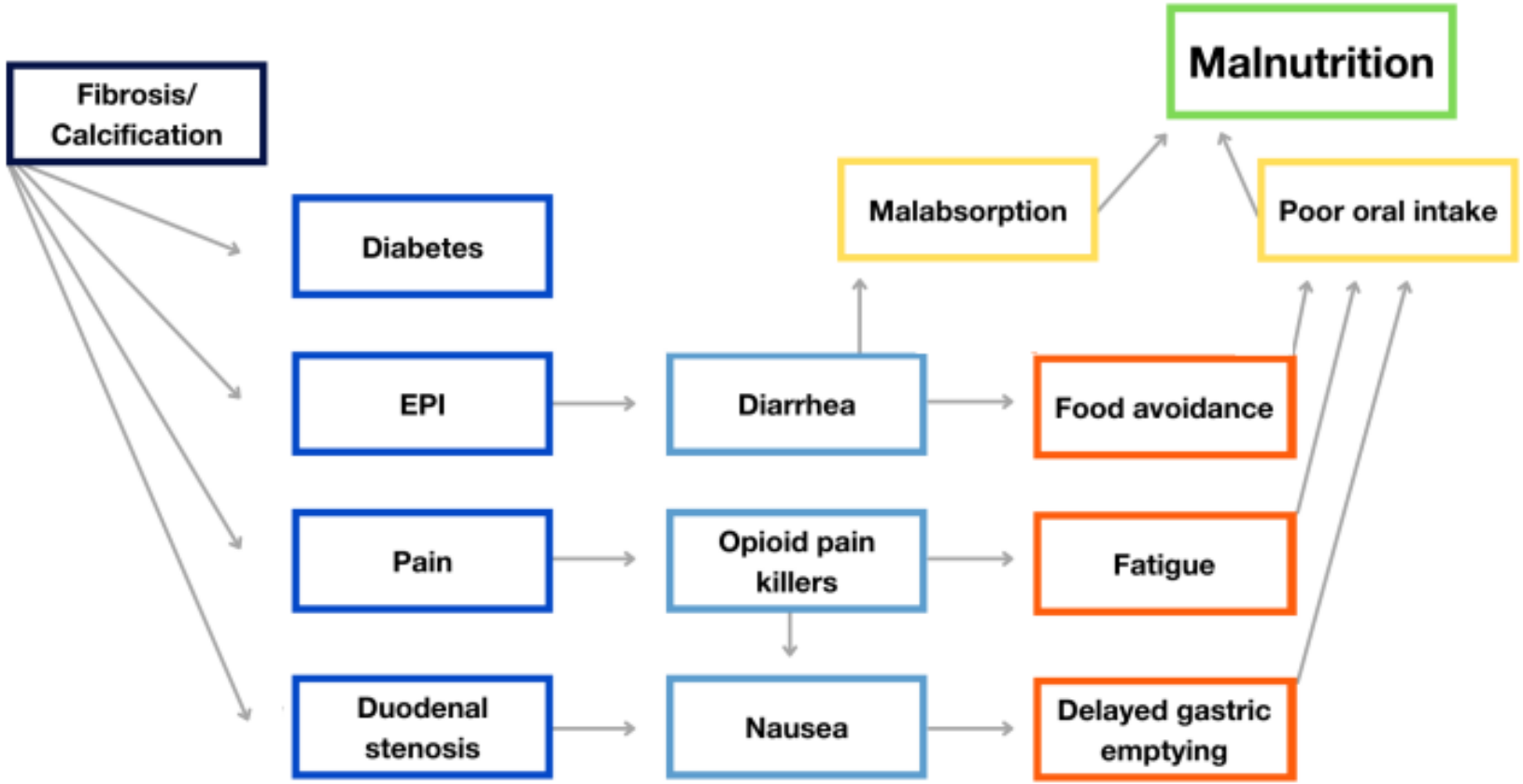
Nutritional Considerations

1.3.3 Be aware that all people with chronic pancreatitis are at high risk of malabsorption, malnutrition and a deterioration in their quality of life.

Pancreatitis (2018) NICE guideline NG104.

Malnutrition

- Multi-factorial



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NORTHERN TERRITORY GOVERNMENT

Pancreatic Exocrine Insufficiency

"...deficiency or absence of digestive enzymes leading to maldigestion of food and consequently malabsorption of nutrients" (Whitcomb et al, 2010)

- PEI is under recognised
- Incidence of PEI in CP patients:
  - At diagnosis: 8–22%
  - 13-26 years: 44–48%
  - 14-36 years: 91–100%

Mullhaupt *et al*, 2005; Whitcomb, D.C. *et al*, 2010

Pancreatic Exocrine Insufficiency

- Can result in:
  - Malnutrition
  - Vitamin and mineral deficiencies (especially fat soluble vitamins, ie. A, E, D and K)
  - Higher prevalence of osteopathy
  - Higher incidence of cardiovascular disease

- Can be treated with Pancreatic Exocrine Replacement Therapy (PERT)

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PERT

- The goal of pancreatic enzyme replacement therapy is to mimic the function of the pancreas during the digestive process
- Efficacy should be evaluated by the relief of GI symptoms and nutritional parameters
- Dosing managed by medical team
- Need to be stored in a cool dry place between 15 -25°C

The posology aims at individual needs and depends on the severity of the disease and the composition of the meal. In practice, a minimum lipase dose of 20,000–50,000 PhU (based on the preparation) shall be taken together with main meals, and half that dose with snacks.

Grade of Recommendation A – Strong consensus (100% agreement).

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Nutritional Management

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Nutritional management of pancreatitis

Chronic pancreatitis (CP)

20) Risk of malnutrition in CP is high and malnutrition is common in patients with CP. (S2, 100%)

21) Pancreatic insufficiency, abdominal pain, alcohol abuse, lower food intake, diabetes mellitus and smoking are the main causes of malnutrition in CP. (S3, 97%)

Diagnostics

- Evaluation of nutritional status and screening for micro- and macronutrient deficiencies — Fig. 6
- Check for PEI and PERT — Fig. 7
- Diagnosis and management of bone diseases — Fig. 8

Nutritional management

- Oral nutrition and ONS — Fig. 9
- EN and PN — Fig. 10

Arvanitakis, M. *et al*, 2020

Recommendations

Patients with CP do not need to follow a restrictive diet.

Strong consensus (94% agreement).

In patients with CP, there is no need for dietary fat restriction unless symptoms of steatorrhea cannot be controlled.

Strong consensus (100% agreement).

Malnourished patients with CP should be advised to consume high protein, high-energy food in five to six small meals per day.

Grade of Recommendation GPP – Strong consensus (94% agreement).

Arvanitakis, M. *et al.* 2020

Case Study

Background

- 51yo Aboriginal male
- Presented to hospital with abdominal pain
- Referred to dietetics for ANT = 8 (malnutrition screening tool)

- Past Medical History:
  - Chronic pancreatitis
  - Type 3c diabetes
  - Microalbuminuria
  - HTN
  - MVA- left leg injury

- Social History:
  - Lives in small remote community with sisters
  - Some reports of overcrowding
  - Reports of some food insecurity at home- sometimes missing meals

Relevant Medications

- PERT 20,000u TDS with meals
- Thiamine
- Multivitamin
- Atorvastatin
- 30u long acting insulin mane

- Intermittent adherence to PERT and insulin

Anthropometry

- Current weight: 43.4kg
- Height: 178cm
- BMI: 13.7kg/m2
- Weight history: 48.5kg (5 months ago), 48.2kg (6 months ago)
- Malnutrition assessment: Severe signs of muscle and fat loss in temples, interosseous muscle, triceps, biceps, knee and thigh.

11% weight loss in 5 months

Clinical

- Poor appetite on admission
- Some nausea, nil vomiting
- Reports yellow coloured and foul smelling stools
- Fatigued++

Diet

- Home diet:
  - Breakfast- toast with jam
  - Lunch- soup with rice
  - Dinner- small amount of meat
- Provides ~4500kJ, 39g protein

- Hospital diet:
  - Breakfast- porridge, toast
  - Lunch- curry and rice
  - Dinner- soup, meat, mashed potato and vegetables
- Provides ~5200kJ, 69g protein

Nutritional Requirements

- Based on weight at 43.4kg for repletion:
  - Energy = 5425kJ – 6336kJ (125 – 146kJ/kg)
  - Protein = 52 – 65.1g (1.2 – 1.5g/kg)

- Meeting ~83% of his energy and 75% of his protein requirements from home diet intake
- Meeting ~95% of his energy and 100% of his protein requirements from hospital diet intake

Nutrition Assessment

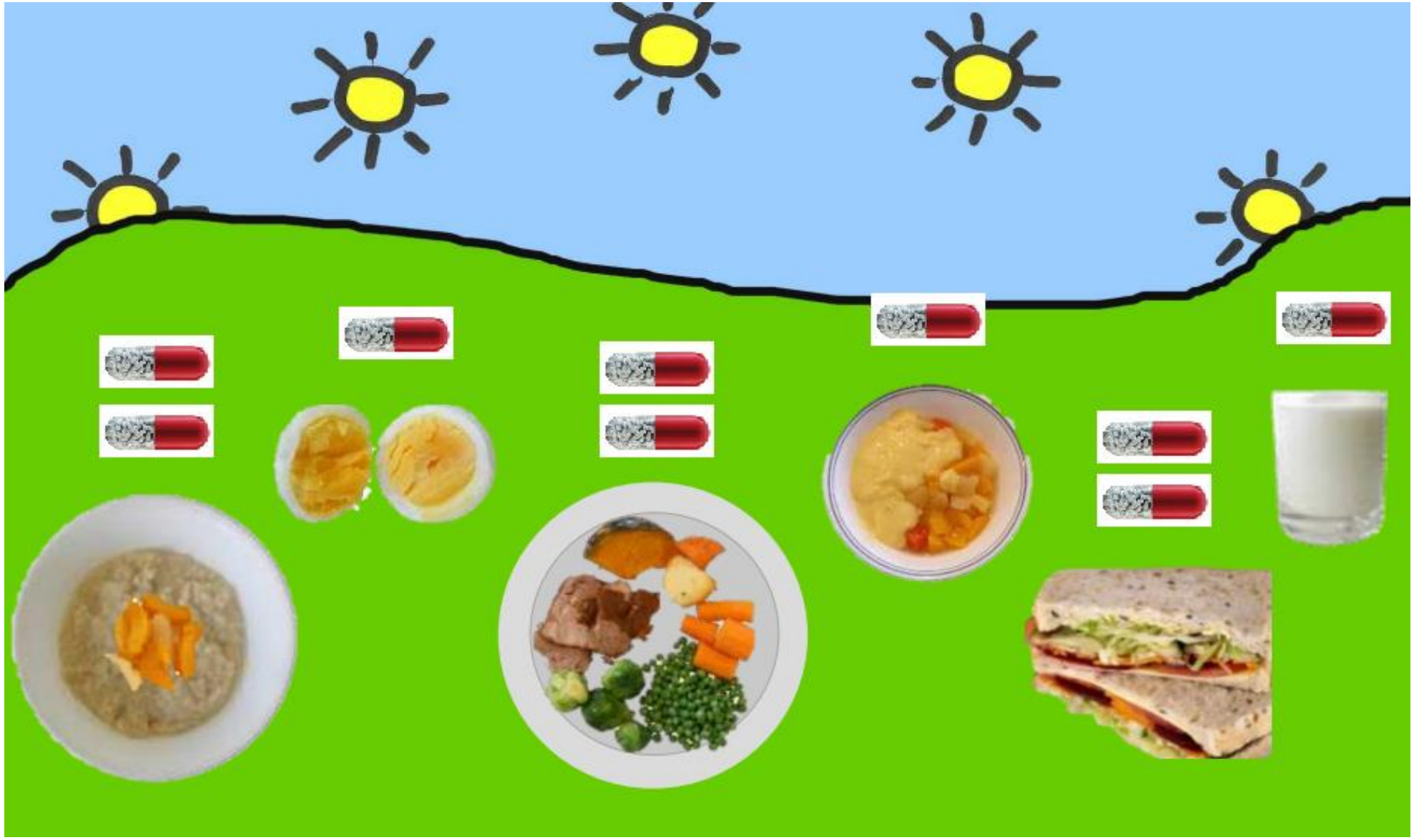
Severe malnutrition related to malabsorption on background chronic pancreatitis and intermittent medication adherence as evidenced by 11% weight loss in 5 months, BMI = 13.7kg/m2 and severe signs of muscle and fat loss.

Nutrition Goals

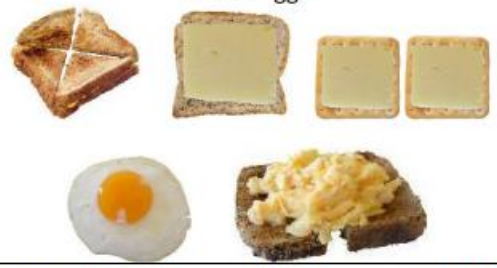
- Prevent further weight loss
- Improve gastrointestinal symptoms
- Improve PERT compliance

Nutrition Intervention

- Liased with medical team to commence PERT PRN with snacks
- Provided eggs and baked beans at breakfast, cheese and crackers at afternoon tea
- Commenced Fortisip Compact Protein OD (provides 1263kJ, 18g protein)
- Educated on pancreatitis and PERT
- Educated on HEHP diet



Making Stronger Meals

Full Fat Milk Powder 	Add big spoons to porridge, cereal, custard, milk , yoghurt 
Cheese 	Add extra cheese to sandwich, have on crackers, add to eggs 
Full Fat Custard/ Yoghurt 	Add yoghurt or custard to stewed or fresh fruit 
Meat 	Add extra meat to sandwiches and meals 
Tinned Beans 	Add beans to main meals or have on toast 

Making Stronger Meals

Peanut Butter 	Add thick spread of peanut butter to toast, bread or crackers 
Olive oil 	Add extras olive oil when cooking e.g. spaghetti bolognaise, stew, curry 
Margarine 	Add thick spread of margarine to bread, toast or damper. Add extra spoons of margarine to baked potato 
Mayonnaise 	Add mayonnaise to eggs, tuna, meat sandwiches 
Avocado 	Add avocado to sandwiches or toast 

This resource has been created by Accredited Practising Dietitians in Central Australia.
Last updated: April 2020

On Next Review…

- Patient had:
  - Gained weight
  - Steatorrhoea symptoms improved
  - Nausea improved

Considerations

- Storage of PERT and insulin
  - Average maximum temperature in Summer 35°C
- Utilising ALOs to support education
- No consistent dietitian servicing community
- Food security
- Utilising supportive family and clinic

Take Home Messages

Take Home Messages

- Monitor for malnutrition
- Monitor fat soluble vitamins
- PEI is under recognised
- Many patients are on sub-optimal doses of PERT
    - Don’t be afraid to increase the dose if symptoms of malabsorption ongoing!
- Get the dietitian involved early

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