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# Diabetes and Endocrinology

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### **Epidemiology, pathophysiology, investigations, treatment for exocrine dysfunction of diabetes**

The exocrine dysfunctions in diabetes is an unrecognised problem in the community. There are no adequate data available to quote the exact number of cases. It is estimated to be in 50% of diabetic patients in retrospective historical observational studies. The exocrine pancreas secretes enzymes that digest carbohydrates, proteins, fats and bicarbonates for neutralisation of acidic chyme from the stomach. Exocrine pancreas consists of 80% to 85 % of the pancreas rest of the gland constitutes the endocrine portion. Functional unit of the exocrine pancreas: Acinus. Pancreatic exocrine insufficiency is the condition where there is inadequate secretion of enzymes in response to the food to maintain normal digestion. The main reasons areas follow, inadequate secretions of pancreatic enzymes, reduced production, reduced secretion, insufficient stimulation, inadequate acid mediated inactivation and obstruction to pancreatic duct. The main clinical consequence of the pancreatic exocrine insufficiency is fat malabsorption and digestion leading to steatorrhea's studies have shown that in almost 50 percent of diabetics have pancreatic dysfunction. In type 1 diabetes up to 51 % and in type 2 diabetes it is up to 32%. There are few theories of pathophysiology of the exocrine dysfunction in types 1 and 2 which are as follow pancreatic islet cells hormones regulatory functions may be impairment, diabetic neuropathy, diabetic angiopathy causing impaired blood flow leading to fibrosis and atrophy, elevated hormones and peptide concentration example somatostatin and glucagon may suppress exocrine function, concurrent damage done by viral infections, genetics autoimmune changes. The reclassification study talks about type 1 presence of autoantibodies early onset, early requirement, type 2 absence of autoantibodies, no (late) insulin requirement, insulin resistance, type 3 absence of autoantibodies, exocrine pancreatic insufficiency, typical morphological findings. The investigations for the diagnosis Pancreatic exocrine dysfunction

are done by faecal elastase concentration (most commonly available) with the formed stool, coefficient of fat absorption (gold standard), carbon 13 (13C) mixed triglyceride breath test (not widely available). The main clinical consequences of Pancreatic exocrine dysfunction are steatorrhea, and this is evident when almost 90% of pancreatic function is lost however experts suggests that early recognition, screening of pancreatic exocrine dysfunction is valuable as their thoughts are it could happen at earlier stage of the disease. Clinical signs are abdominal pain, flatulence, weight loss and steatorrhea? Glycaemic control (yet to be explored). The treatment with Pancreatin improves HbA1C, improvement in clinical sign, improves in increatin effects, fewer hypos. Do we routinely ask for Gastrointestinal side effects in our diabetic patients, most often no and is put down to medication (metformin) and autonomic dysfunction rather that Pancreatic exocrine dysfunction? I think it is time to rethink the way we look at diabetes and pancreatic insufficiency. Early recognition can treat the pancreatic exocrine dysfunction and in fact improve HbA1C and reduce the risk of the complications associated with diabetes.

#### **Speaker Biography**

Rekha Annie Prasad is a consultant physician at a tertiary hospital and works at other sites. She has been a clinician in Australia for the past 18 years with varied experience, remote and in urban areas. She has her speciality interests as acute medicine, pre and peri operative medicine, obstetric medicine. She is passionate about diabetes management and chronic disease management especially in aboriginal population. She is involved in teaching under graduate students for Notre Dame University and University of Western Australia. She is also a mentor for post graduate students taking their fellowship exams. She is on the safety and medication committee of Sir Charles Gardiner Hospital. She is also a panel member of undiagnosed disease panel in Western Australia. She also practices tele-medicine for remote communities dealing with chronic diseases especially diabetes.

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