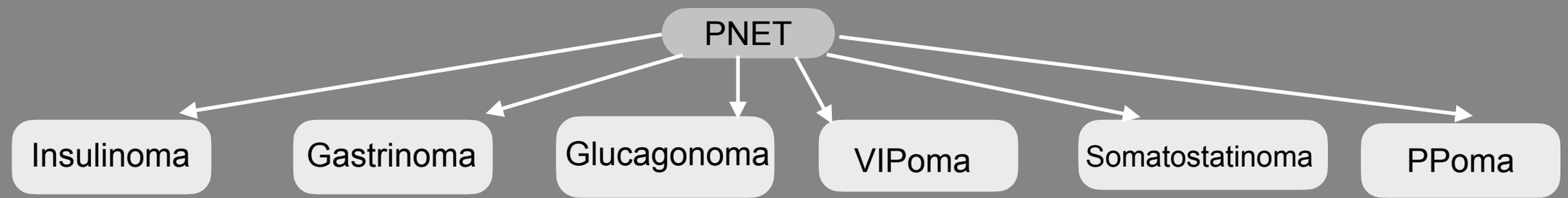
UKINETS bitesize guidance
Diagnosis of Functional Pancreatic Neuroendocrine Tumours (PNET)



	Insulinoma	Gastrinoma	Glucagonoma	VIPoma	Somatostatinoma	PPoma
Features	Whipple's triad - Symptoms of hypo - Documented hypoglycaemia - Relief of symptoms with carbohydrate	Peptic ulcer disease, GI bleed, PPI responsive diarrhoea	Weight loss, diabetes, rash (necrolytic migratory erythema), diarrhoea, DVT, cardiomyopathy	High volume diarrhoea, hypokalaemia, achlorhydia, hypercalcaemia	Diabetes, gallstones, diarrhoea, weight loss	Weight loss, mass effect of tumour
Biochemistry	Admit for 72hr supervised fast. Raised insulin/c-peptide in setting of hypoglycaemia (plasma glucose <2.5mmol/L).	Serum gastrin (raised in atropic gastritis/PPI use) Gastric pH ≤ 2	Serum glucagon, plasma glucose	Fasting VIP	Fasting somatostatin	Fasting pancreatic polypeptide
Location	Pancreas (100%)	Duodenum (75%) Pancreas (25%)	Pancreas (100%)	Pancreas (95%), ectopic secretion	Pancreas (55%) duodenum. Rare jejunum, colorectal	Pancreas (100%)

Author: Una Graham
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UKINETS bitesize guidance
Localisation of Functional Pancreatic Neuroendocrine Tumours

Localisation

Tumours may be small and require a number of imaging modalities to identify. These include triple phase CT, MRI, endoscopic US and SSR imaging such as ^{68}Ga dotatate PET CT

Additional localisation studies (Insulinoma)

1. Selective arterial calcium sampling
2. Exendin PET CT (limited availability - ~~Insulinoma~~)

Initial medical management

Insulinoma	**Gastrinoma**	**Glucagonoma**	**VIPoma**	**Somatostatinoma**	**PPoma**
Diet, diazoxide	High dose PPI	Diet, SSA	IV fluids, SSA, steroids	SSA	SSA

Genetic testing

Consider if multiple primary tumours in multiple organs, age onset <40yrs, family history

(ENETS 2023 Guidance for Functioning Pancreatic Neuroendocrine Tumour Syndromes. J Neuroendocrinol 2023; 35)

Author: Una Graham
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UKINETS bitesize guidance
Functional Pancreatic Neuroendocrine Tumours

fPNET (rare pancreatic primary)

	Carcinoid syndrome	ACTHoma	PTHrPoma	Calcitoninoma	GNRHoma
Features	Flushing Diarrhoea Bronchospasm	Cushing's syndrome	High calcium Low phosphate	Diarrhoea Flushing	Acromegaly
Bloods	24hr urinary 5HIAA Plasma 5HIAA	24hr urinary free cortisol Salivary cortisol 1mg ODT ACTH	Raised PTHrP Suppressed PTH	Calcitonin	IGF1 OGTT with growth hormone

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