

# A multi-centre retrospective cohort study of weight loss and nutritional interventions in severe acute pancreatitis

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**BACKGROUND**  
Acute pancreatitis is one of the most common acute gastrointestinal diseases. Severe acute pancreatitis (SAP) can develop in up to 20% of patients and is associated with increased morbidity and mortality. Patients can have long and complex hospital admissions; nutritional support is a cornerstone of management. Due to increased metabolic demands and development of pancreatic exocrine insufficiency (PEI) patients frequently lose large amounts weight. There has been little research into the effect of SAP on nutritional status and nutritional interventions.

**RESEARCH AIMS**

- Describe weight loss in SAP
- Determine routes of feeding used in SAP
- Describe prevalence of PEI, including pancreatic enzyme replacement therapy (PERT)
- Describe prevalence of diabetes (DM)

**METHOD**  
Participating centres were recruited via the nutrition interest group of PSGBI and were required to submit 5-10 completed data forms for consecutive patients meeting inclusion criteria admitted from 01.01.2018.

**Inclusion criteria;**

- age ≥18 years
- SAP defined by organ failure of >48hrs of any cause

**Exclusion criteria;**

- death during admission

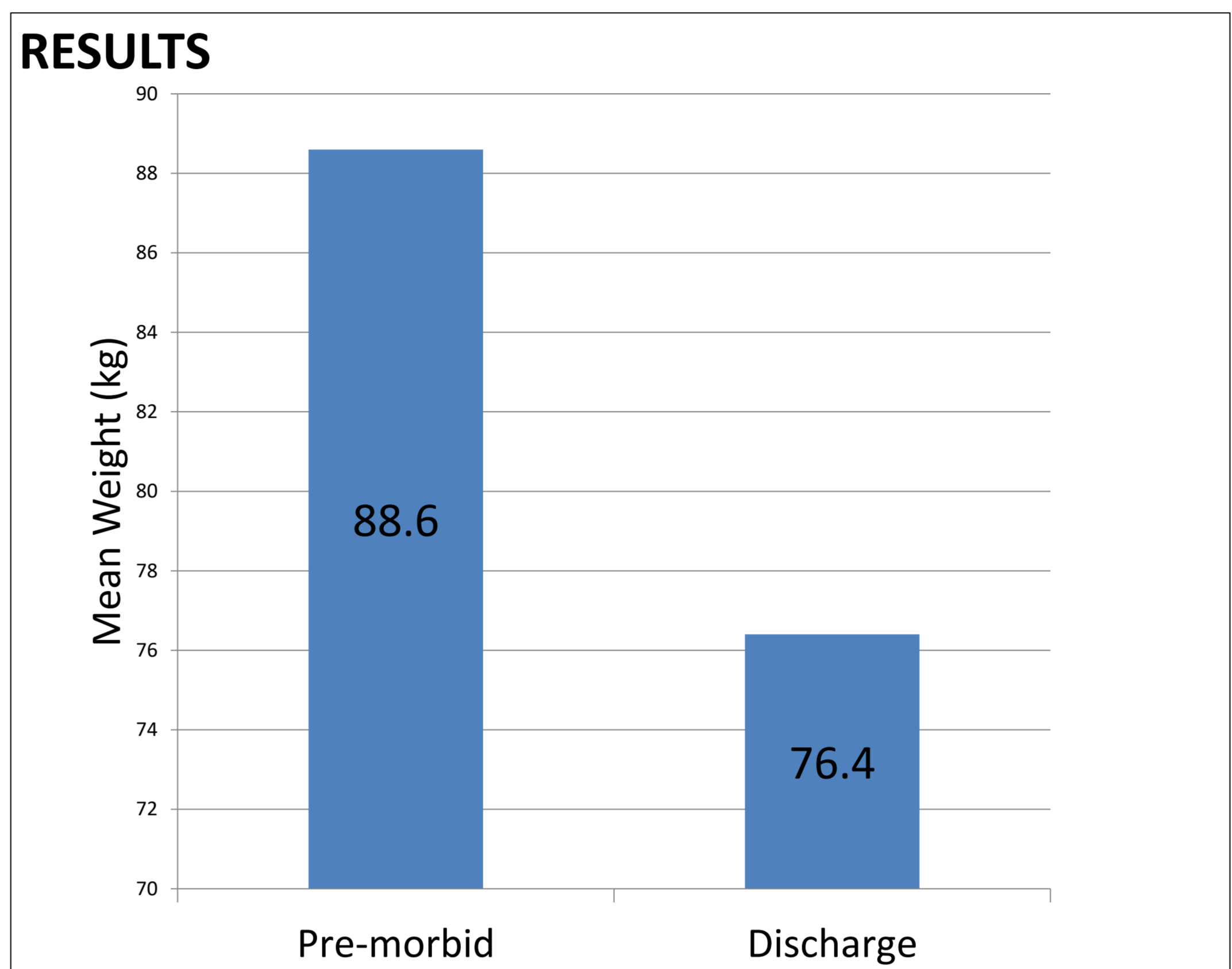
Data were collected regarding, length of stay (LOS), days on ICU, weight changes, anthropometric measures, nutritional interventions used, and use of PERT and diabetic status including insulin use.

**RESULTS**

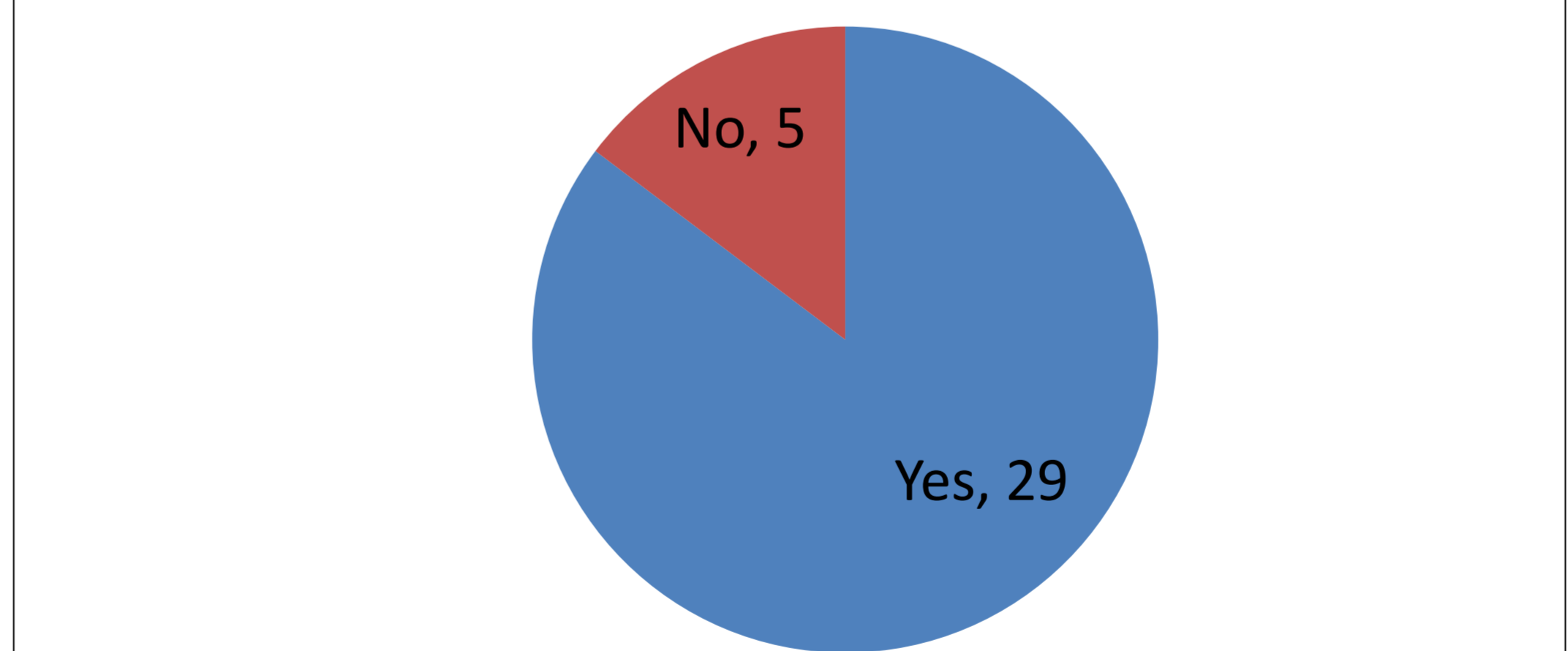
Table 1 – Population demographics	n=34 (%)	Range
Gender	22(65) male 12(33) female	
Mean age (years)	56.5	20-86
Ethnicity	26(76) White British 5(15) Not stated 2(6) Other White background 2(6) Asian British 1(3) Malaysian	
Aetiology	13(38) Gallstone 11(32) Alcohol 2(6) Post ERCP 2(6) Ideopathic 6(18) Other	
Mean LOS (days)	66	11-299
Mean ICU LOS (days)	24	2-134

Figure 1 shows mean weight changes from pre-morbid to discharge. Mean weight loss of 12.2kg (p<0.001) and 12.6% (p<0.001) was observed from pre-morbid to discharge.

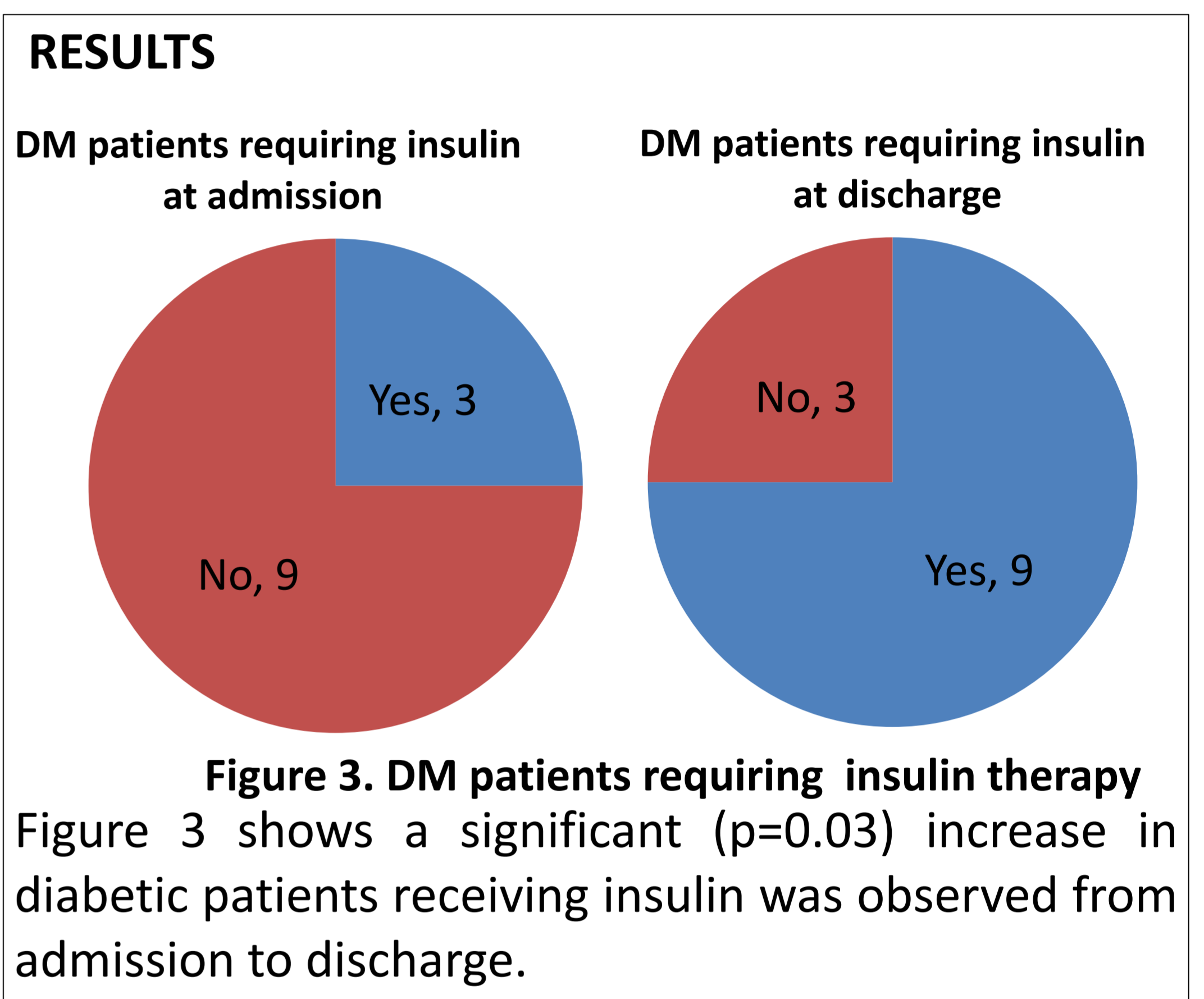
- Factors associated with weight loss from pre-morbid to discharge after multivariate analysis were;
- Higher pre-morbid weight, every 10kg increase in pre-morbid weight was associated with 2.1% (p=0.02) increased weight reduction.
  - PERT with tube feeding was associated with 11% (p=0.005) increase weight reduction compared to no PERT.



**Figure 1. Weight change from pre-morbid to discharge**  
34/34 patient were referred to dietitians. The mean days from admission to dietitian referral was 2.6 (range 0-10). The mean days between dietitian reviews during admission was 2.8 (range 1-7).



**Figure 2. Tube feeding during admission**  
Figure 2 shows 29/34 patients received tube feeding during admission. Mean duration of tube feeding was 57 days (range 4-291).  
31 patients were discharged eating and drinking. 29/31 were prescribed oral PERT on discharge.  
The most common doses were 75,000 units lipase with meals and 50,000 units lipase with snacks.



**Figure 3. DM patients requiring insulin therapy**  
Figure 3 shows a significant (p=0.03) increase in diabetic patients receiving insulin was observed from admission to discharge.

**CONCLUSIONS**

- Limitations of this work include small sample size and retrospective nature of data collection.
- SAP patients lose significant weight during long hospital admissions with prolonged ICU stays and require tube feeding for long periods of time.
- The relationship between % weight loss and PERT with tube feeding may be related to more significant PEI, this warrants investigation in future work.
- The significant increase in diabetic patients receiving insulin and the number of patients discharged on PERT reflects the impact SAP has on pancreatic exocrine and endocrine function.
- Results can be used as a baseline for determining effectiveness of nutritional interventions in SAP and can provide a basis for further prospective research in this area.