Enhanced recovery after pancreatico-duodenectomy in a global pandemic – early results of an observational trial.

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Introduction

Enhanced recovery is well established within pancreatico-duodenectomy and established as a multidisciplinary multi-modal service (1), which over recent years has evolved to include prehabilitation (2).

Physical activity is a key aspect of both prehabilitation and enhanced recovery (1, 2). With a greater understanding of the impact of sarcopenia both on surgical complications and likelihood that patients will initiate or complete adjuvant chemotherapy (3,4), We designed a trial to explore all the options of post operative recovery, in order to identify areas for improvements in clinical practice.

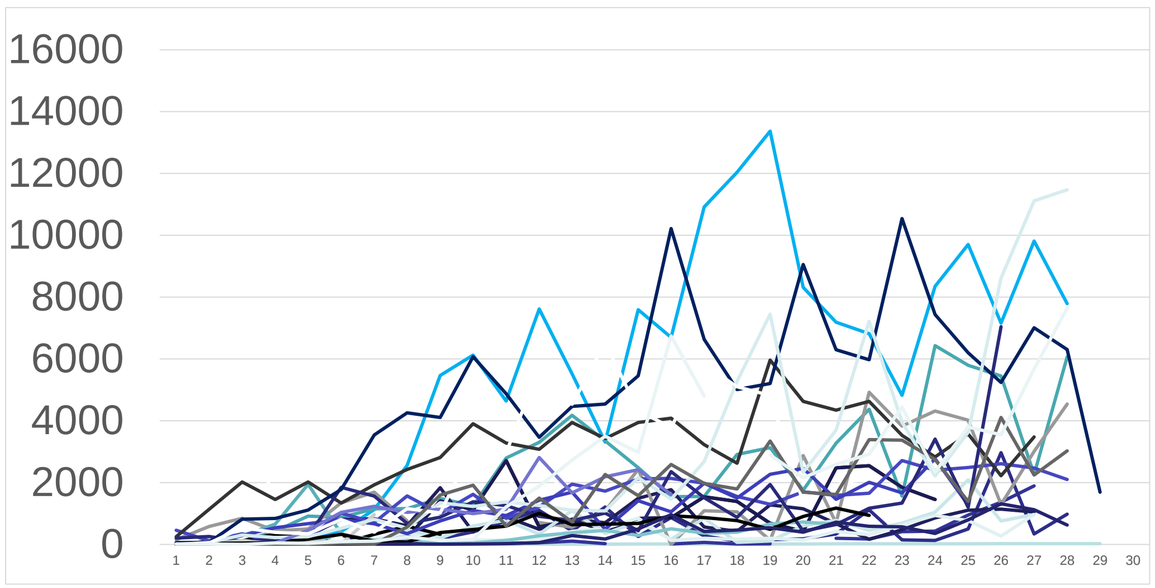
Aim

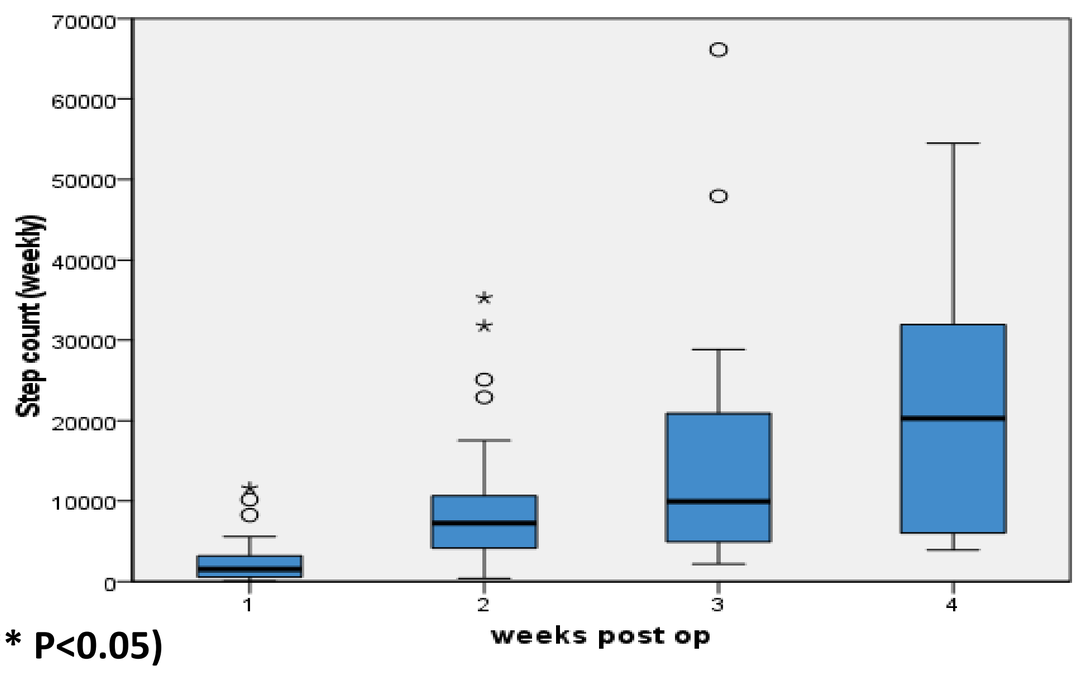
To assess physical activity after pancreatico-duodenectomy.

Methods

Participants were recruited pre-operatively. Patient demographics, subjective global assessment (SGA) and sit to stand (30 seconds) were collected pre-operatively, on discharge and at one month follow up. Patients wore an accelerometer (GeneActive, UK) for the first 28 days after surgery. Sedentary activity levels were defined as <5000 steps per day. Favourable ethical opinion was obtained (IRAS 288252). Data were analysed in SPSS (version 28). Data from the first 25 patients recruited is presented.

Figure 2: Step count for first 28 days after surgery





** P<0.05)

Results

25 patients (68% male); mean age 66 (range 52-80) years consented for inclusion. 15 underwent pylorus preserving pancreatico-duodenectomy; 9 Kaush-Whipple, and one total pancreatectomy. 7 procedures were carried out as an emergency "hot Whipples", 18 were elective. 2 patients had neo-adjuvant chemotherapy. Complications are listed in Table 1

Complications	Number (n=25)
30-day mortality	0
Re-laparotomy	0
Post operative haemorrhage	0
Clinically relevant pancreatic fistula	3
Delayed gastric emptying	5
Wound infection	1
Chest infection	1
Chyle leak	1
Length of stay (mean, range)	10.5 (5-26)
Number of patients discharged home before day 10	17 (69%)

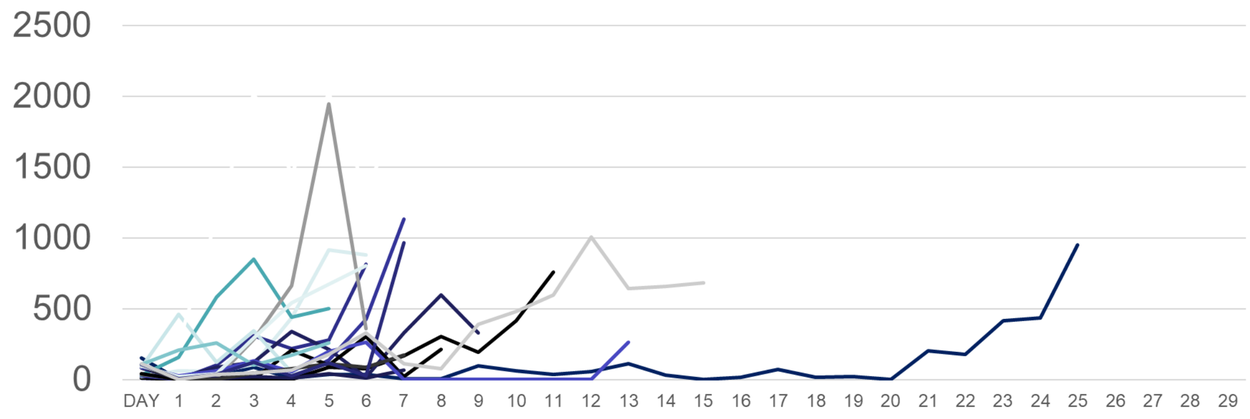
Table 1: Post operative complications and length of stay

Physical activity was very low, with 10 patients (40%) never exceeding 2000 steps per day by day 28. Ten patients (40%) achieved 2000-4000 steps, two (8%) achieved 5000-10000 steps and 3 patients (12%) achieved 10,000 – 11,000 - although each only achieved this on a maximum of 2 days in the 28-day period (Figure 2). All patients met the criteria for "sedentary" by day 28 post-operative.

Despite an enhanced recovery programme promoting early mobilisation, inpatient steps did not exceed 500 steps per day in 21 of 25 patients (84%) (Figure 3).

Sit stand tests deteriorated during admission: mean 16.8 (SD 6.2) at pre-op to 10.7 (SD 4.5) at discharge (p=0.001) but improved at one-month review (mean 16.5 (SD 4.1), p<0.001). There was no difference from baseline to one month (p=0.350) (Figure 4)

Figure 3: Step count during inpatient stays



Conclusion

- Patients were sedentary in the post operative phase.
- Limitations to this study include ward level COVID restrictions that limited access to out of the bed space for inpatients, and did not allow us to collect pre-op activity levels which would have strengthened this study.
- Future planned work will explore the impact of activity and nutritional status on surgical outcomes, length of stay and uptake of adjuvant chemotherapy alongside techniques to optimise mobility in the early post-operative stage and to promote exercise after discharge.

References

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