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a prospective longitudinal study

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The pre- and postoperative course of functional status of patients with esophageal cancer undergoing esophagectomy

A prospective longitudinal study

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Introduction

- The prevalence of postoperative complications (POC) in patients with esophageal cancer undergoing esophagectomy is high (up to 60%).¹
- Physiotherapy is recommended to improve functional status in the pre- and postoperative stages. However, knowledge of the course of functional status and its association with POC in patients after esophagectomy is limited.²

Objective

To investigate the course of functional status in patients with esophageal cancer before and after esophagectomy.

Methods

Patients: We assessed 155 (100%) patients at 3 months and at 1 day before surgery, 109 (70.3%) at 1 week after surgery and 60 (55%) at 3 months after surgery (Figure 1). We used linear mixed model analyses.

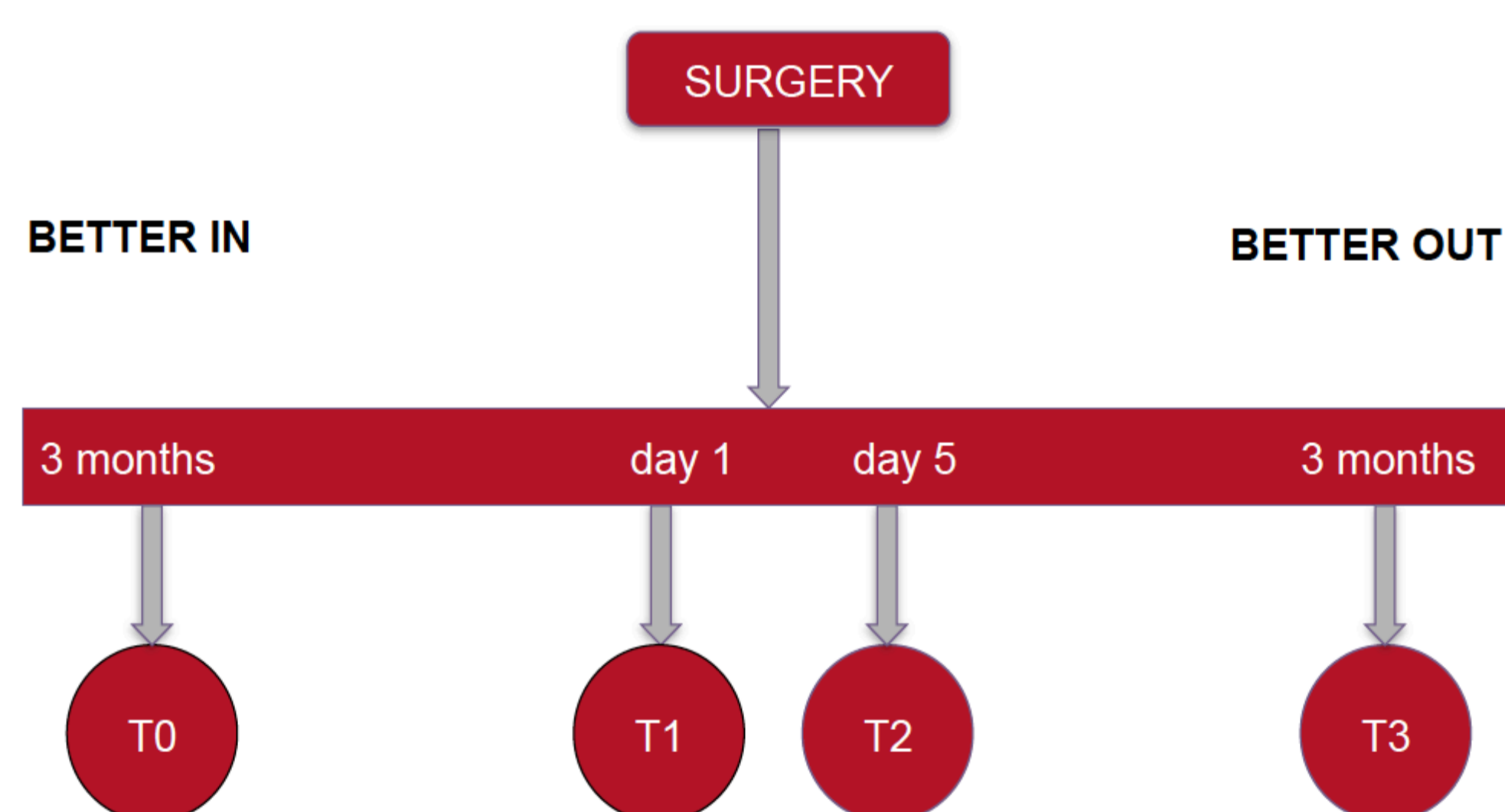


Figure 1. Measurements over time

Functional status: was assessed according to the domains of the International Classification of Functioning, Disability and Health (ICF) (Figure 2).

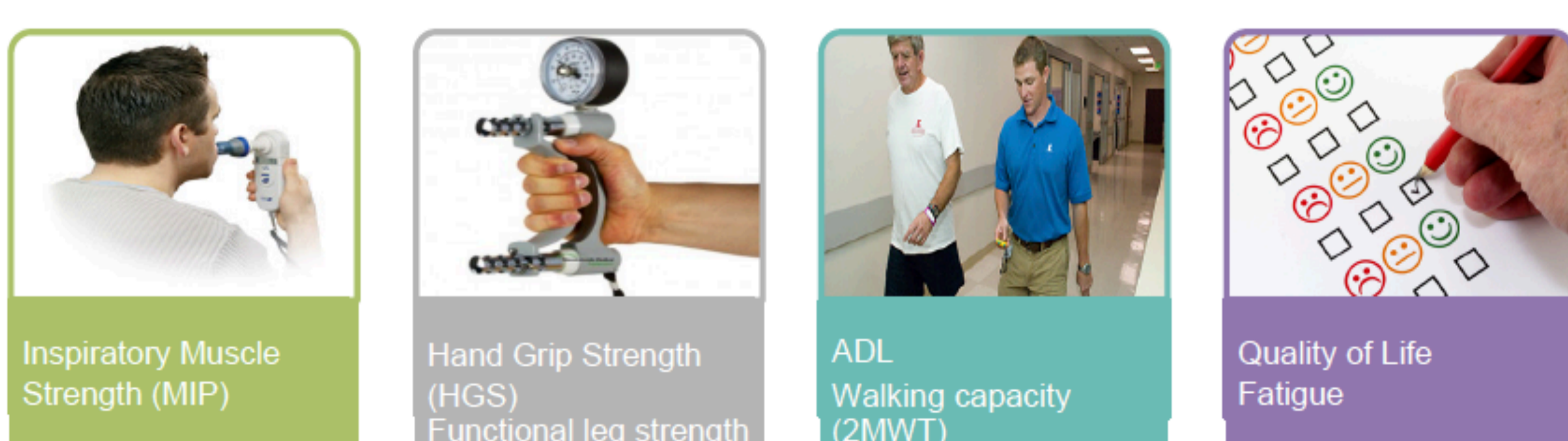


Figure 2. Measurements of functional status

Results

- The incidence of POC was 83 (53.5%).
- The mean level of HGS, proximal muscle strength of the lower extremities and MIP at T0 and T1 was higher than predicted when adjusted for sex and age (Table 1).
- At T4, all mean functional status measures returned to baseline levels, but patients had significantly less HGS and experienced more fatigue (Table 1).
- No differences in functional status between patients with and without complications at the different time points were observed, apart from 2 MWT at T2.

Measurements	T1	T2	Δ T2-T1 (95% CI)	T3	Δ T3-T1 (95% CI)	T4 (95% CI)	Δ T4-T1 (95% CI)
HGS	110.99 (25.88)	114.26 (21.67)	2.61 (-1.29, 6.51)	108.17 (23.32)	-2.75 (-6.83, 1.32)	104.81 (30.05)	-6.16 (-11.25, -1.06)
MIP	119.74 (40.63)	125.36 (38.49)	4.06 (-6.2, 8.74)	88.42 (33.56)	-37.21 (-43.04, -31.38)	120.41 (38.11)	-4.38 (-10.52, 1.77)
30 s CST	118.08 (28.85)	117.00 (38.16)	-2.78 (-4.69, 5.25)	87.64 (34.00)	-32.23 (-37.73, -26.73)	119.13 (38.07)	-2.33 (-8.87, 4.21)
2 MWT (m)	193.55 (29.22)	202.26 (35.56)	9.36 (4.04, 14.68)	147.52 (37.17)	-48.35 (-54.00, -42.70)	191.20 (34.42)	-5.72 (-12.63, 1.19)
MFI Fatigue, median (IQR)	45.45 (26.25)	40.84 (23.75)	-4.65 (-7.58, -1.72)	-	-	49.20 (17.14)	4.69 (7.1, 8.67)
EORTC QLQ C30 Quality of Life (% median (IQR))	73.44 (15.73)	80.53 (14.16)	7.10 (3.92, 10.27)	-	-	71.81 (18.11)	-2.46 (-6.69, 1.76)
LAPAQ (Kcal/day) median (IQR)	475.37 (550.23)	864.48 (671.00)	363.96 (177.58, 550.33)	-	-	453.04 (539.36)	136.84 (-106.82, 380.50)

Table 1. Differences in functional status outcomes

Conclusion

This study shows that the functional status of high-risk surgical patients undergoing esophagectomy returned to baseline values three months after surgery, despite the high incidence of postoperative complications.

Practical implications

This study illustrates the importance of first evaluating the pre- and postoperative course of the functional status of high-risk surgical patients and of timing and tailoring the physiotherapy treatment to a patient's individual needs, before referring them for pre- or postoperative physiotherapy.

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