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Changes in health-related quality of life during rehabilitation in patients with operable lung cancer – a feasibility study (PROLUCA)

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INTRODUCTION

Surgical resection in patients with non-small cell lung cancer (NSCLC) may be associated with significant morbidity, functional limitations and decreased Quality of Life (QoL).

OBJECTIVE

Is to present HRQoL changes over time before and one year after surgery in patients with NSCLC participating in a rehabilitation program.

METHODS

Forty patients with NSCLC (disease stage I-IIIa) referred for surgical resection at Department of Cardiothoracic Surgery RT, Rigshospitalet, were included in the study. Baseline characteristics are presented in table 1. The rehabilitation program consisted of a supervised group exercise program two hours weekly for 12 weeks combined with individual counseling. Study endpoints were self-reported HRQoL (FACT-L, EORTC-QLQ, SF-36) and self-reported distress, anxiety, depression, and social support (NCCN Distress thermometer, HADS, multidimensional scale of perceived social support) measured pre-surgery, post-intervention, six months, and one year after surgery. The patients were also asked about smoking and alcohol habits.

RESULTS

Forty patients were included, and rehabilitation was completed by 73%. Results regarding emotional well-being ($P < 0.0001$) (Figure 1), global quality of life ($P = 0.0032$) (Figure 2) and mental component score ($P = 0.0004$) (Figure 3) showed an overall statistical significant improvement during the study. Levels of distress ($P = 0.0006$) (Figure 4) and anxiety ($P = 0.0003$) (Figure 5) decreased significantly during the intervention but reversed between six months and one year after surgery without reaching baseline levels. The changes in smoking habits showed a reduction in number of currently smoking patients from 25% at baseline to 5% post intervention followed by an increase to 12% one year after surgery. The same pattern was seen regarding alcohol consumption.

CONCLUSION

This feasibility study demonstrated that global health, mental health and emotional well-being improved significantly during the study period, in patients with NSCLC participating in rehabilitation. There was a reduction in distress and anxiety, smoking and alcohol habits from baseline to six months, followed by an increase one year after surgery, which underlines the need of optimizing maintenance from rehabilitation.

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Table 1. PROLUCA feasibility baseline characteristic. Results.

Variable	Total n=40
Age, years, median (range)	68 (36-85)
Female, n (%)	24 (60%)
FEV1 (L/s), % predicted (SD)	94% (23.7)
Smoking history	
Currently smoking, n (%)	10 (25%)
Never smoked, n (%)	2 (5%)
Ex-smoker, n (%)	28 (70%)
Type of lung surgery	
Thoracotomy, n (%)	9 (22)
VATS, n (%)	31 (78)
Adjuvant chemotherapy, n (%)	13 (33)
Cardiorespiratory Capacity	
Fitness, mL/kg/min, mean (SD)	19.4 (5)
Peak oxygen uptake, L/min, mean	1.40 (0.39)
6MWD, Meter (SD)	477 (81)

Figure 3. Short Form Health Survey (SF-36) Mental component score. Score range 0-60. High scores indicate good health-related quality of life. CI: confidence interval

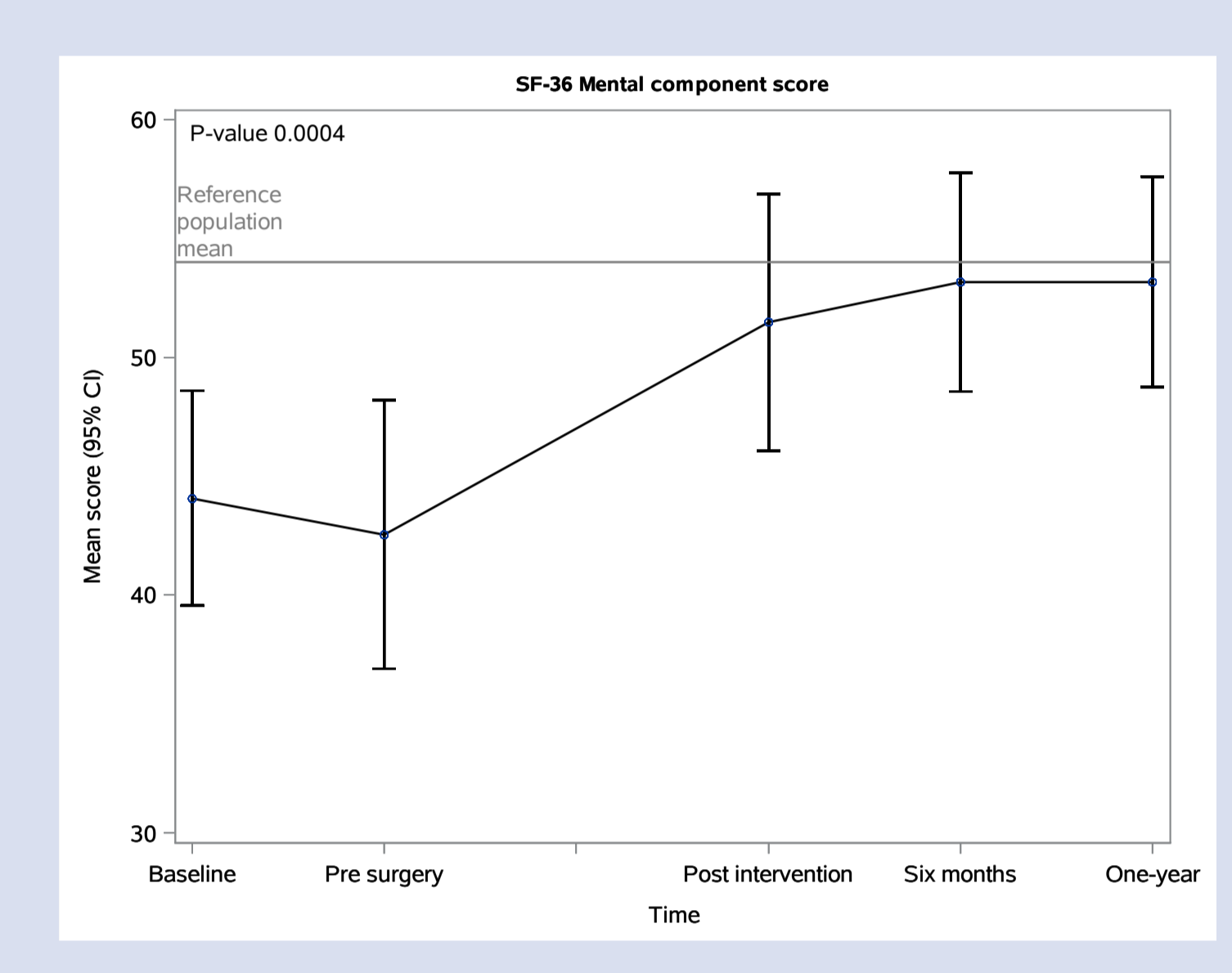


Figure 1. Functional Assessment of Cancer Therapy–Lung (FACT-L) Emotional well-being. Score range 0-24. High scores indicate good health-related quality of life. CI: confidence interval

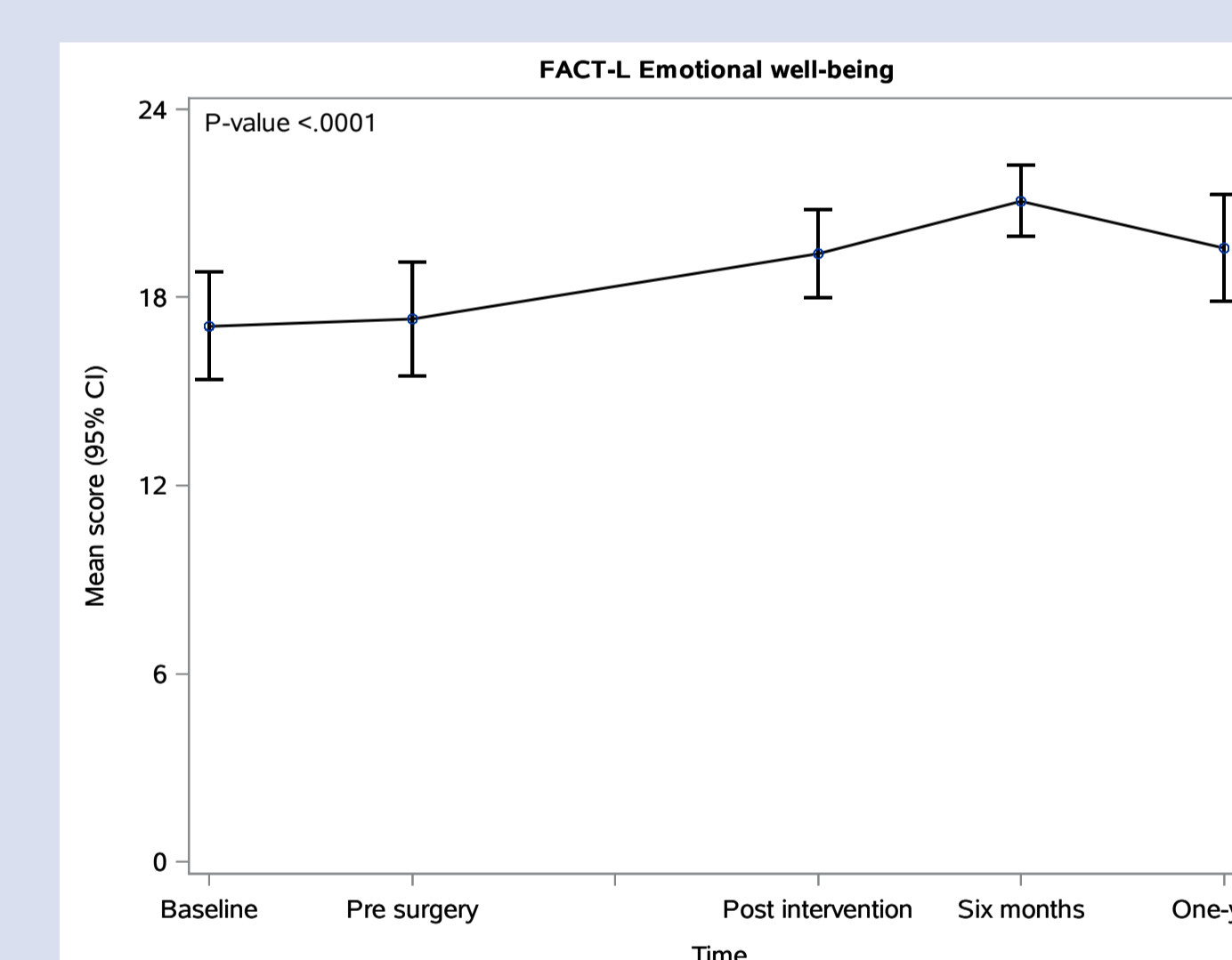


Figure 4. National Comprehensive Cancer Network Distress thermometer Distress. Score range 0-10. Low scores indicate low level of distress. CI: confidence interval

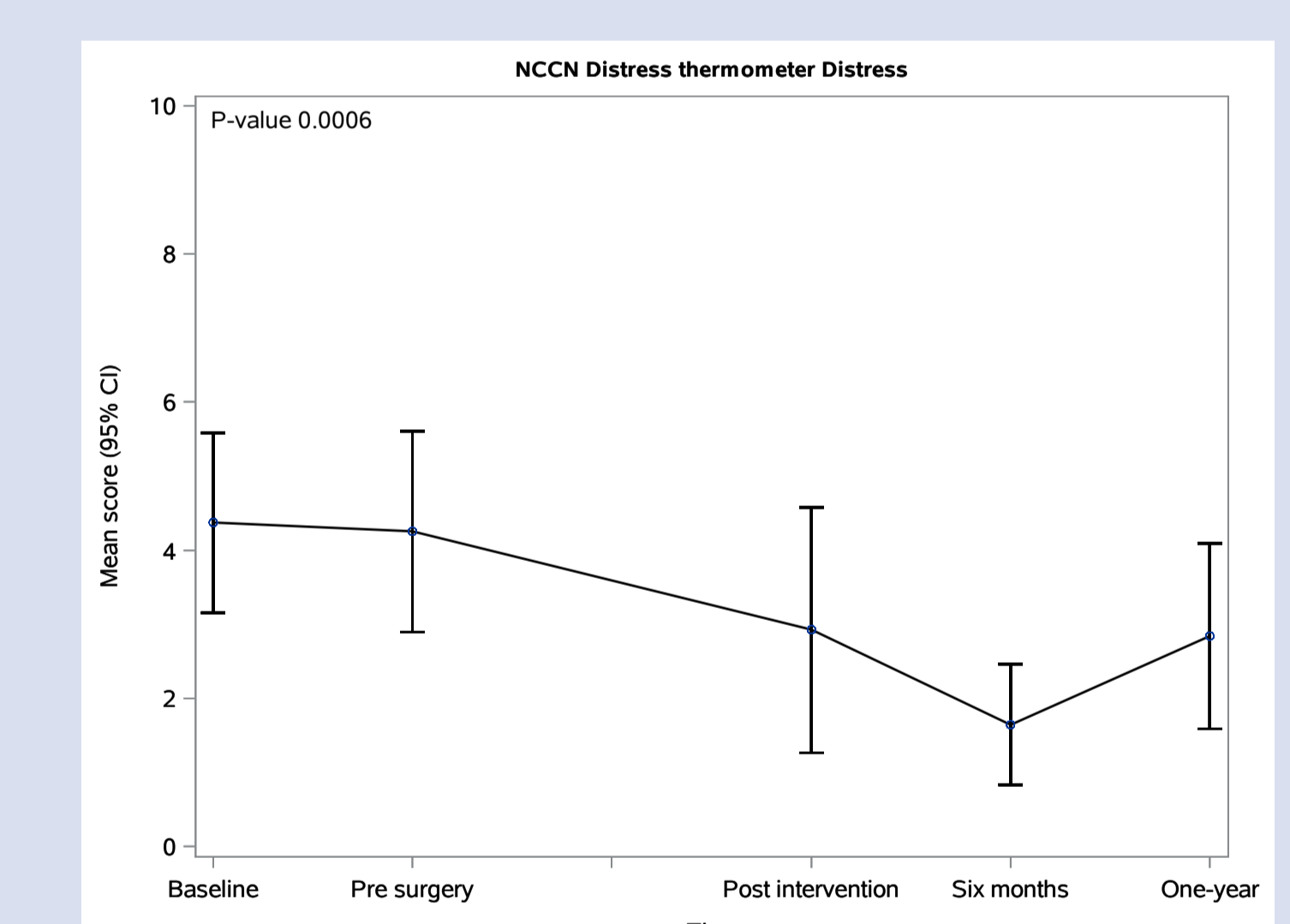


Figure 2. European Organization for Research and Treatment in Cancer–Quality of Life Questionnaire (EORTC-QLQ) Global quality of life. Score range 0-100. High scores indicate good health-related quality of life. CI: confidence interval

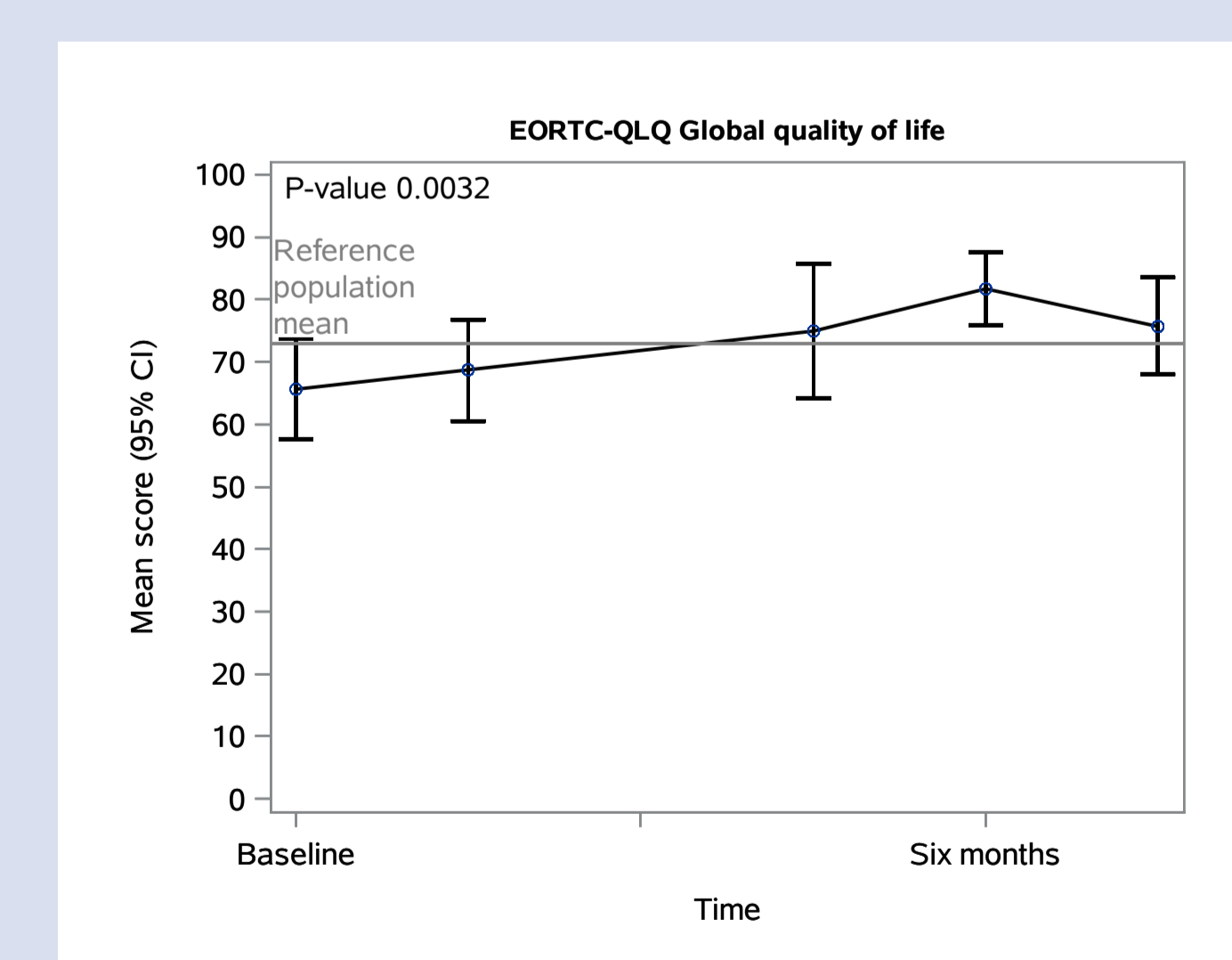


Figure 5. Hospital Anxiety and Depression Scale (HADS) Anxiety Score range 0-21. Low scores indicate low level of anxiety. CI: confidence interval

