

ABSTRACT

This thesis focuses on the possibilities of using physiotherapy in preoperative care for patients with abdominal hernia. The theoretical part describes the kinesiology of the abdominal wall and its involvement in the stabilization system of the spine. Furthermore, the issue of abdominal hernia is described with a focus on etiology, risk factors, mechanisms of occurrence and possible complications. The rehabilitation of patients before and after surgery is discussed, including various options for assessing the health status of patients. In the practical part, the effect of rehabilitation on improving the pre-operative condition of patients is examined.

Methodology: 29 patients with abdominal hernia were evaluated (mean age 63,2 years, $SD \pm 11.3$). The diagnosis was established by physicians from 3rd Surgical Clinic of the 1st Faculty of Medicine of the UK and the Motol General Hospital and from the Surgical Clinic of the 2nd Faculty of Medicine of the UK and the Motol General Hospital, who indicate rehabilitation in patients. A detailed anamnesis was taken before starting therapy. The entrance and exit examination included a kinesiological analysis, anthropometric measurements, assessment of hypermobility, assessment of two-point discrimination and body composition analysis using a device working on the principle of bioelectrical impedance. Furthermore, trunk stabilization in 3 postural positions was assessed using the OhmBelt tensometric device. Patients filled out the SF-36 questionnaire before and after the intervention to subjectively assess their health status. The intervention consisted of 6-8 individual therapies, during which the patients exercised under the guidance of physiotherapists from the Department of Physical Education and Sport Medicine of the Motol Medical Center. The therapy was particularly focused on chest mobility using manual techniques and mobilization techniques, on training the correct activation of the abdominal muscles using elements of Dynamic Neuromuscular Stabilization, Vojta Reflex Locomotion Therapy and fitness exercises. Individual therapy was followed by movement therapy on bicycle ergometer or elliptical trainer 2-3 times a week for 3 months or until the date of surgery.

Results: There was a statistically significant improvement in trunk stabilization in all tested positions ($p < .001$) with a large effect size, as well as significant changes in tactile perception on the abdominal wall ($p < .001$) with a large effect size. The hypothesis that there would be a greater representation of individuals with generalized hypermobility among patients with abdominal hernia has not been confirmed. After the intervention, the patients did not rate their condition subjectively better than before the therapy ($p = 0.090$). There was a significant

reduction in weight ($p < .01$), anthropometric parameters ($p < .001$), reduction in fat mass ($p = 0.001$) and improvement in spine mobility (from $p < .001$ to $p = 0.05$).

Conclusion: The positive effect of physiotherapy on the health status of patients with abdominal hernia was proven.