Abstract

“Resistance exercise training for cancer-related fatigue patients including aspects of circadian rhythms”

The part of concerned patients in cancer-related fatigue is still constantly high. Because of the limiting character, cancer-related fatigue is one of the unpleasent adverse reactions of cancer. The current study shows that a part of 70% of the 1324 hospital patients reviewed with Fatigue-LASA suffer from fatigue. The study was realized with two groups, a control group and an intervention group.

The control group took only part in the rehabilitation program of the hospital. The intervention group did the same and practised additionally a structured home based resistance exercise program. During the whole study patients of both groups answered questionnaires about fatigue (MFI, FACIT-F), anxiety, depression (HADS), quality of life (EORTC QLQ-C30), physical activity and fatigue rhythms. In addition the maximum isometric muscle force (Isometric Muscle Strength Test) and the aerobic endurance (PWC 130, 6-Minutes Walk Test) were tested in patients of both groups The influence of rehabilitative resistance training on the points mentioned above should be investigated. In relation to fatigue rhythms the daytime of practice should be verified with this study.

The study took four months and questionnaires were given to the patients at three times, T1, to T3. T1 and T2 dated the beginning and the end of rehabilitation, T3 took place three months after rehabilitation. The patients of the intervention group

also documented the structured home based resistance exercise program.
During the rehabilitation maximum isometric muscle force and aerobic endurance increased in both groups. The increase might be a result of a better muscle coordianation.
In the intervention group there were measured significant time effects from T1 to T2 in nearly every investigated categories of the questionnaires. The fatigue scores of the intervention group decrased from T1 to T2 (from 69,79±20,0 to 47,77±26,5). Also the quality of life score increased significantly in the intervention group. Anxiety and depression scores also decreased from T1 to T2. In the control group significant differences beetween T1, T2 and T3 could only investigated in some subscales.
Both groups showed an increase of physical fitness during the rehabilitation.
Both increased significantly in walk distance. The results of the fatigue rhythm questionnaires showed a daily rhythm of fatigue in both groups. The fatigue scores were low in the morning and increased during the day to their maximum at the evening. Conclusivly, it was shown that a structured home based resistance exercise program had a positive influence on cancer-related fatigue, anxiety, depression and quality of life. In addition it could be shown that there is a fatigue rhythm in cancer-related fatigue patients. Further studies should investigate how the fatigue rhythm can be used for scheduling practice in daily routine of therapy during the rehabilitation.