2. Summary: Effect of clinical nutrition and physiotherapy in acutely ill geriatric patients on morbidity, mortality and physical condition – prospective longitudinal study

Background and aims:

An acute disease with catabolic reaction, decreased food intake and low physical activity leads to the muscle mass loss. Deepening of sarcopenia then brings a higher morbidity and mortality in elderly people. The aim of our study was to determine whether an active approach based on early nutritional therapy and exercise during the acute illness may influence the development of sarcopenia and long-term prognosis of the illness.

Methods:

There were 200 seniors at the age of over 78 years included in the prospective study. They were hospitalized in geriatric department with an acute internal disease, randomized with an envelope method into an intervention group (IG, n=100) and a control group (CG, n=100). The intervention group had nutrition support (600 calories, 20 grams of protein per day) on top of a standard diet and started with an intensive physiotherapy (training with bicycle ergometr twice a day and 15 minutes of physiotherapy twice a day). The control group was treated the usual way. The total follow-up period was 2 years.

The tolerance of nutritional supplements and its effect on the spontaneous food intake were evaluated during hospitalization, weight, the skinfold on triceps, arm circumference, LTM, FAT and albumin were assessed on regular bases. Also the numbers of planned and unplanned controls, readmissions and self-sufficiency after discharge were recorded. As well the mortality was observed.

Results:

The use of nutritional supplements led to an increased daily total energy and protein intake, the sip feeding was well tolerated.

The skinfold on triceps and arm circumference decreased at the IG on contrary to CG during the first year of the follow-up, the BIA results showed an increase of fat adipose tissue at CG compared to growing lean tissue at IG. The difference between the groups after discharge was statistically significant. The albumin decreased in both groups in discharge (statistically significant), afterwards an increase in both groups in 6 months followed. An average number of planned controls was similar in both groups (without statistical significance).

The unplanned controls number in IG was decreasing from the discharge to 15 months (0,54 ± 0,86 in 3 months, 0,25 ± 0,47 in 15 months). In the control group the number of unplanned controls was higher than in IG, the maximum in 21 months (0,65 ± 1,00 compared to 0,36 at IG). In readmissions the number was lower in IG in 3 months (IG 0,24 ± 0,52, CG 0,36 ± 0,62 (p=0,103)). Similarly the lower number of readmissions was in 6 and 9 months in IG. There was a trend of higher rehospitalisations evident in the results in the whole follow-up period. Self-sufficiency evaluated by the BI scale decreased in 3 months in CG by 8,1 points, in IG by 5,1 points. The difference between the groups in 3 months was statistically significant (p=0,036), in two years the significance was p=0,049. Mortality was similar in both groups.

Conclusion:

This prospective randomised study showed a positive effect of an early nutrition support and physiotherapy. The interventions reduce the negative aspects of an acute illness in seniors, propably due to the prevention of critical muscle mass loss. The consequence is a decreasing loss of self-sufficiency and slightly decreasing number of unplanned controls and readmissions. A good nutrition and physical activity prevent an acceleration of sarcopenia.