P280-e
Effectiveness of for- and backward gait in rehabilitation of patients with senile osteoporosis
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Keywords: Osteoporosis; Physiotherapy; Gait

Introduction.– The decrement of individual risk of fractures is important aim of senile osteoporosis treatment. The aim of study was analysis of useful of two rehabilitation programs.

Material and methods.– The study group consists of a group of 61 women in the age from 63 to 84 years. Fifty female (average age – 72.5 ± 5.8) with senile osteoporosis was qualified for further analysis. Specific randomization was used for division into two groups: Model 1 – the comprehensive physiotherapy and training of forward gait (25 female), Model 2 – comprehensive physiotherapy and training of a backward gait (25 female). The short-term rehabilitation was applied (in hospital for 3 weeks) and long term (home – up to 4 mouths after leaving hospital) was applied. In three stages following tests were marked: muscle strength, value of thoracic kyphosis, TUG test, TINETTI’s test.

Results.– Improvement after hospital rehabilitation was achieved in both groups. Long-term positive effect was observed in Model 2.

Conclusion/Discussion.– Appliance of rehabilitation in senile osteoporosis indicates improvement of muscle strength, balance and gait. Improvement is more significant when backward gain was applied.

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P281-e
Urinary dysfunction and frailty in elderly
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Keywords: Frailty; Urinary dysfunction; Standardized geriatric evaluation; Elderly

Objective.– To analyze the frailty components in an elderly population who was referred for investigation of urinary dysfunction.

Methods.– Retrospective, monocentric analysis. Sixty-one patients, 75 years or more had urodynamic testing and standardized geriatric evaluation which investigated daily activity, depression, balance, dementia, cardiac or neurological disease.

Results.– During 2012–2013: 49 women (82 ± 3 years) and 12 men (80 ± 4 years). No specific correlation between one co-morbidity and urinary dysfunction. Lower number of co-morbidity was associated with dysuria, higher with retention and mixed incontinence. The only group in which the percentage of depressed patient was predominant was that which had the syndrome hyperactivity with impaired contractility of the detrusor (no significant).

Conclusion.– The standardized geriatric evaluation allows to bring to the fore the frailty syndrome in elderly, but is not contributive to predict the kind of incontinence and its mechanism [1].

Reference

P282-e
Effects of different interventions on falls and falls-related functional factors in veteran elderly: A pilot randomized controlled trial
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Keywords: Falls; Elderly; Intervention; Randomized control trials; Whole-body vibration; Balance training; Health education

Introduction.– Falls are particularly common among older people. The aim of this pilot randomized controlled trial was to evaluate the effects of whole-body vibration training (WBV), balance training at home (BTH), health education of falls (HEF) on the falls and falls-related mobility function, balance and general health status in veteran elderly.

Methods.– One hundred and twenty older subjects with fall history were randomly assigned to the WBV + HEF group, BTH + HEF group, HEF group and control group. The intervention period was 12 weeks. The TUGT, FTPST, lower extremities muscle strength, balance function, balance confidence, ADL, IADL, general health status and frailty status were assessed at the beginning and after 12 weeks of the intervention. SPSS17.0 was used for data management and analysis.

Results.– WBV + HEF reduced the time of TUGT and FTPST, improved the bilateral knees extensor strength, balance, ADL, IADL, and general health status (P < 0.05); BTH + HEF improved the balance ability, balance confidence and general health status (P < 0.05); HEF improved the general health status (P > 0.05); and No effects were observed in control group (P > 0.05).

Discussion and conclusions.– WBV, BTH, and HEF are safe and effective in improving the falls-related mobility function and the general health status in elderly.

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P283-e
Aging, Osteoarthritis, Sarcopenia and Rehabilitation – Evidence-based review
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Keywords: Aging; Sarcopenia; Osteoarthritis; Rehabilitation

Introduction.– Aging is related to some of the most frequent musculoskeletal pathologies. Osteoarthritis (OA) is a degenerative condition that results from lesions on hyaline cartilage, synovial membrane and subchondral bone. Sarcopenia (SC) is a progressive loss of muscle mass, strength and function. We review the evidence of OA and SC age-relation and searched for the rehabilitation evidence in this trial.

Methods.– PubMed research, Mesh terms method, with the following key words aging, sarcopenia, osteoarthritis and rehabilitation. English published articles included.

Results.– Nineteen articles identified with words aging, OA and SC. 3 articles identified with four key words. Two non-English articles excluded. According to evidence, aging is the most important risk factor for the development and progression of OA. With aging there are mechanical, molecular, cellular, inflammatory and metabolic modifications at muscle and articular levels, which contribute to OA and SC progression. If on one side SC compromises articular stability, on the other OA articular dysfunction promotes reflex muscular atrophy. Active life style, articular ROM and muscle strength allow an increase of functional lifetime in the elders.
Discussion.-- OA and SC are prevalent in the elderly. Rehabilitation has an important role in controlling/preventing motor disability progression caused by this interaction.

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P284-e
How medication can effect falls of the elderly
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Keywords: Falls; Medication; Osteoporosis

Introduction. – Fall is an unintentional drop of a person to the ground without influence of external factors or underlying disease. Falls are important health problem among people over 60 years old as being associated with fractures.

Methods. – Information collected by doctors using a medication logbook distributed to 300 people over 60, in the county and urban cities. Medication logbook underlines: age, sex, leaving area, diseases and relevant medications, falls and fractures during last 2 years. Participants were separated in groups according to their diseases and relevant medication in order to be compared.

Results. – Less falls appeared to groups suffering from cardiovascular or psychiatric diseases under relevant medications than the other groups. The group with osteoporosis/osteoepenia had an increased incidence of falls, however only a small percentage of these had resulted to a fracture. Finally the group of oldest taking three or more different kind of medications (polypharmacy) presented high incidence of falls.

Discussion. – Polypharmacy was associated with increased falls’ incidence of the elderly (P < 0.01). Older people over 60, suffering from osteoporosis/osteoepenia exhibited significantly more falls (P < 0.05) than older people with normal BMD, however individuals under medication for osteoporosis had less fractures due to falls than non-treated individuals.

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P285-e
Relationship between fall risk factors, bone mineral density and fragility fractures in postmenopausal women
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Keywords: Fragility fractures; Strength; Isokinetic; Balance

Introduction. – Fall fracture risk is determined by both bone health and fall risk. Evidence suggests that postmenopausal women with reduced bone mineral density may have greater risk of falling than age-matched healthy women. The aim of this pilot study was to compare quadriceps strength, balance and functional mobility in decreased bone mineral density patients with and without fragility fractures.

Material and methods. – Fifty-two postmenopausal women, diagnosed with osteoporosis or osteopenia by dual-energy x-ray absorptiometry, participated in this observational cross-sectional study. Quadriceps strength (isokinetic dynamometry), balance (Berg scale) and functional mobility (Timed Up and Go test) were assessed. Fragility fractures were anamnestically or radiographically identified. Performance and comparison of the two groups (with and without fractures).

Results. – Fragility fractures were identified in 19 patients (37%). Patients with fragility fracture history performed significantly worse than the others for all measured parameters (P < 0.05).

Discussion. – Impairments in balance, muscle strength or functional mobility increase the risk of fragility fractures in postmenopausal women with reduced bone mineral density. Therefore, in order to avoid fractures in this population, attention should be paid not only in restoring bone mass, but also in fall risk factors assessment and their adapted correction by comprehensive rehabilitation programs.

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P286-e
Sensory peripheral neuropathy in lower limbs increases heel pressure ulcer risk in older adults
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Keywords: Pressure ulcers; Aged; Peripheral neuropathy

Aim. – Correlate lower limbs’ sensory peripheral neuropathy and heel pressure ulcer.

Methods. – Patients included were admitted to a geriatric rehabilitation center in Paris and Saint-Etienne from March 2009 to June 2010. Patients with Mini-Mental State Examination less than 10 were not included, also hemiplegic and paraplegic patients. The presence of heel pressure ulcer was noted at admission and its stage. The sensory neuropathy severity was graded using Neuropathy Symptom Score (NSS) and Neuropathy Disability Score (NDS) as none (NSS = 0; NDS = 0), light (NSS = 3–4; NDS = 1–5), moderate (NSS = 5–6 or NDS = 6–16) and severe (NSS > 6 or NDS > 16).

Results. – Of the 210 included patients (85 ± 6 mean years old; 75% females), 26 had heel pressure ulcer (stage 1: 13, stage 2: 7, stage 3: 4 and stage 4: 2) and 201 exhibited sensory neuropathy (light: 37, moderate: 121 and severe: 43). Heel pressure ulcer stage was correlated to sensory neuropathy severity (Pearson 0.22; P = 0.001).

Discussion. – The presence of sensory peripheral neuropathy in lower limbs increases heel pressure ulcer incidence and severity in older adults.

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P287-e
Training of elderly people on a skiing ergometer (ThoraxTrainer). The effect of a four-week intervention with high intensity interval training; focus on core stability and balance
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Keywords: ThoraxTrainer; Skiing ergometer; Ergometer; Anaerobe; Training: Elderly people; Balance; Core; Stability Skiing ergometer training; Core stability and balance; Rehabilitation of elderly; Double poling; Upper body strength and endurance; Balance training

Methods. – Ten healthy elderly men and women aged 65–82 performed 6 × 30 s high intensity intervals with 30 s pause, 2 times a week for 4 weeks in a skiing ergometer (ThoraxTrainer). They were divided in two groups: 1. Performing double poling on two legs. 2. Performing double poling on both two legs and one leg at a time. Performance and comparison of the two groups were tracked during three tests: the plank, LMC-tests and selected tests from BBS and BESTest.

Results. – We found improvement in all performed tests for both groups. LMC: Group 1 – 32.2% vs. Group 2 – 43.5%; Bergs/BESTest: 14.9% vs. 3.5%; Plank: 32.6% vs. 42.3%. Three of the four LMC-tests show significance (P < 0.05) or low significance (P < 0.10) that training in Group 2 gives a better result than training in Group 1. Training in a skiing ergometer (ThoraxTrainer) shows improvement for both groups in all tests. We found that group 2 had a big-