

高齢者夜間頻尿に対する運動療法の効果

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Effects of Exercise Therapy on Nocturia in the Elderly

by

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ABSTRACT

We examined whether nocturia in the elderly would be improvable by the exercise therapy. The exercise therapy combined gymnastics, walking, dumbbell movement and squat movement. Questions relating to micturition and exercise, body composition analysis, blood biochemistry, and urinalysis were performed before and after the exercise therapy for 4-8 weeks, and the effect of the exercise therapy was examined. Fifteen cases (12 men, 3 women, 69 years old of average age) actually continued the exercise therapy and have been possible for evaluation, but all cases were continuing mainly the walking. The number of nocturia

significantly ($p < 0.001$) decreased from 3.3 ± 0.6 (mean \pm standard deviation) times to 2.0 ± 0.8 times after the exercise therapy. In addition, the edema ratio (extracellular water volume / total body water volume: from 0.352 ± 0.003 to 0.350 ± 0.002), serum noradrenaline (from 749 ± 133 pg/ml to 645 ± 154 pg/ml), dopamine (from 25 ± 7 pg/ml to 15 ± 7 pg/ml) and total cholesterol (from 226 ± 17 mg/dl to 209 ± 20 mg/dl) also significantly ($p < 0.05$) decreased. By the impression of the cases after the exercise therapy, the opinion that sleep became deep was acquired from 10 cases (67%). In the degree of whole improvement, excellent or good improvement were recognized in 8 cases (53%). As a main factor of effects of the exercise therapy for nocturia, it was able to consider having made sleep deep and having made arousal threshold bladder volume by sense of urination increase.

要 旨

高齢者の夜間頻尿を運動療法で改善できるのか検討した。運動療法は体操、ウォーキング、ダンベル運動とスクワット運動を組み合わせた。運動療法の前と4-8週間後に問診、体組成分析、血液生化学検査と尿検査を行い、運動療法の効果を検討した。実際に運動療法を継続し、前後の評価が可能であったのは15例（男性12例、女性3例、平均年齢69歳）で、全例がおもにウォーキング

を継続していた。夜間排尿回数は運動療法前 3.3 ± 0.6 回から運動療法後には 2.0 ± 0.8 回へと有意に減少した。その他、浮腫率、ノルアドレナリン、ドパミンと総コレステロールが有意に低下した。運動療法後の症例の印象では眠りが深くなったとの意見が10例（67%）から得られた。全般改善度では改善以上が8例（53%）であった。運動療法による夜間頻尿改善効果の主要因子としては、睡眠を深くして尿意覚醒閾値膀胱容量を増加させたことが考えられた。