

KSN 2016 Abstract Submission

Dialysis

The Effect of Home Rehabilitation Program on Muscle Strength in Patients with Peritoneal Dialysis

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Background: Patients with dialysis have low physical activity. The design of home-based rehabilitation program may help patients to do more exercise resulting in improvement of physical function.

To assess the effect of home rehabilitation program on muscle strength and quality of life (QOL) in peritoneal dialysis(PD) patients.

Methods: The patients with ≥ 18 year of age performed PD at least 3 months at the HRH Princess Maha Chakri Sirindhorn Medical Center (MSMC) were invited to this study. The inclusion criteria to select patients were lack of serious medical illness which was contraindication to exercise, able to stand with stability, and having readiness to follow the rehabilitation program. The patients were received the equipment, elastic band, and trained how to use it for exercise at home. They were assessed the physical fitness prior to start the program and reassessed at the 4th, 8th and 12th week. The muscle strength was assessed by using digital hand grip dynamometer and digital leg dynamometer. The QOL was evaluated by using SF36 Thai version. The temperature, heart rate, respiratory rate, systolic and diastolic blood pressure (SBP, DBP), and oxygen saturation were additionally evaluated.

Results: The 30 PD patients with 16 males and 14 females were enrolled in this study. The mean age was 51.57 ± 11.83 years (23-69 years). The mean duration of dialysis was 21.47 ± 19.10 months (3-72 months). The variable before and after start program at the 4th, 8th and 12th week were shown improvement with significant difference in SBP, DBP and SF 36 in aspects of social role functioning, emotional role functioning, bodily pain, vitality and the total score. The values of these variables are showed in table.

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Parameter	Before	After 4 th week	After 8 th week	After 12 th week
Temperature (°C)	36.48±0.34	36.41±0.37	36.41±0.37	36.38±0.28
Heart rate (beat/minute)	77.87±12.79	73.50±11.65	74.90±11.97	78.77±12.88
Respiratory rate (per minute)	19.50±1.76	19.10±1.79	19.33±2.25	19.53±1.80
SBP (mmHg)	162.6±22.4	148.2±20.2*	146.23±17.2*	147.63±20
DBP (mmHg)	94.20±13.29	85.47±12.33*	87.73±7.94	87.97±11.08
Oxygen saturation	97.70±1.53	98.30±1.12	98.50±1.01	98.30±1.02
Left Hand grip strength	20.66±7.63	23.96±8.47	23.97±8.66	23.92±8.73
Right hand grip strength	21.62±8.50	23.91±9.21	25.17±9.36	25.11±9.55
Leg and back strength	57.54±35.54	65.69±33.29	67.31±34.82	67.96±35.92
Physical functioning	83.11±13.22	89.57±9.67	88.33±9.30	87.00±10.22
Role physical	73.75±22.58	85.00±19.53	81.25±20.70	77.08±21.55
Social role functioning	83.33±19.18	94.00±11.92*	92.67±13.11	90.33±14.02
Emotional role functioning	70.00±24.13	84.44±20.03*	88.33±17.04*	83.90±16.65*
Bodily pain	74.25±17.88	86.37±12.80*	84.85±13.78*	85.15±16.62*
Mental health	75.89±19.96	88.22±15.95	86.67±15.16	85.89±13.69
Vitality	60.97±16.28	75.42±16.75*	75.56±15.07*	74.30±16.53*
General health perception	63.83±14.95	71.17±15.63	68.83±16.12	69.5±16.73
Total score in SF36	72.39±12.61	83.29±9.12*	82.09±9.95*	80.90±10.23*

*p <0.05

Conclusion: Our home-based rehabilitation program has benefit to PD patients in improvement of physical function and QOL.

Key words: rehabilitation, peritoneal dialysis, exercise, quality of life