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ORIGINAL ARTICLE

Effectiveness of an educational intervention and physical exercise on the functional capacity of patients on haemodialysis☆

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KEYWORDS
Education;
Chronic disease;
Exercise;
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Muscle strength

Abstract
Objective: To describe the impact of a standard hospital educational intervention including active physical exercises on personal well-being, functional capacity and knowledge of the benefits of prescribed physical activity for patients undergoing haemodialysis.
Method: An uncontrolled, quasi-experimental, before-and-after study with repeated measures of response variables at 4, 8 and 12 weeks after participating in an educational and physical exercise hospital intervention. It was performed at the Nephrology Unit at the Hospital Complex in Vic within September and December 2014. The patients' well-being, functional capacity and knowledge were assessed. Assessment tools: NOC nursing indicators, Barthel index scale, FAC Holden, Timed Get Up and Go test and Daniels scale.
Results: We included 68 (80.0%) patients and 58 (85.3%) completed, with a mean age of 70.16 ± 13.5 years; 62.1% were males. After 12 weeks, the patients had better scores of personal well-being (2.33 ± 1.2, 3.88 ± 0.8), more autonomy to perform activities of daily living (Barthel: 92.8 ± 12.8; 93.5 ± 13.9), more muscle strength (Daniels Scale: 3.81 ± 0.7, 4.19 ± 0.6) and walked more briskly (Get Up and Go test: 14.98 ± 8.5; 15.65 ± 10.5). All of the score differences were statistically significant ($P < .05$) except the Barthel Index.

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Conclusions: The standard educational intervention and active exercise performed at hospital level improved the personal well-being, knowledge and functional capacity of patients on haemodialysis.

PALABRAS CLAVE
Educación;
Enfermedad crónica;
Ejercicio;
Diálisis renal;
Fuerza muscular

Efectividad de una intervención educativa y de ejercicio físico sobre la capacidad funcional de los pacientes en hemodiálisis

Resumen
Objetivo: Describir el impacto de una intervención educativa hospitalaria estandarizada incluyendo la realización de ejercicios físicos activos, en el bienestar personal, capacidad funcional y nivel de conocimiento de los pacientes en hemodiálisis.
Método: Estudio cuasiexperimental, no controlado, antes y después, con medidas repetidas de las variables respuesta a las 4, 8 y 12 semanas, después de participar en una intervención educativa a nivel hospitalario y de ejercicio físico intradiálisis. Se desarrolló en la Unidad de Nefrología del Consorcio.

Hospitalario de Vic, entre setiembre y diciembre de 2014. Se evaluó el bienestar de los pacientes, capacidad funcional y conocimientos. Instrumentos de valoración: indicadores de resultados de enfermería NOC, índice de Barthel, escala FAC de Holden, Timed Get Up and Go test y escala de Daniels.
Resultados: Se incluyeron 68 (80%) pacientes y finalizaron 58 (85,3%) de los cuales el 62,1% eran hombres y una media de edad de $70,16 \pm 13,5$ años. Después de 12 semanas, los pacientes presentaron mejores puntuaciones de bienestar personal ($2,33 \pm 1,2$; $3,88 \pm 0,8$), más autonomía para realizar las actividades de la vida diaria (Barthel: $92,8 \pm 12,8$; $93,5 \pm 13,9$), más fuerza muscular (escala de Daniels: $3,81 \pm 0,7$; $4,19 \pm 0,6$) y andaban más ligeros (Get Up and Go test: $14,98 \pm 8,5$; $15,65 \pm 10,5$). Todas las diferencias de las puntuaciones fueron estadísticamente significativas ($p < 0,05$), excepto el índice de Barthel.
Conclusiones: La intervención educativa y de ejercicios físicos activos desarrollada en el ámbito hospitalario mejora el bienestar personal, el grado de conocimiento y la capacidad funcional de los pacientes en hemodiálisis.

What is known?

Several studies conclude that physical exercise as a complementary therapy in the treatment of patients in haemodialysis may improve the results of dialysis and increase the long-term survival rate, while when undertaken during dialysis it is safe and has no associated complications in properly selected patients.

What does this article contribute?

The results of a standardised educational intervention in hospital and limb together with respiratory exercises in haemodialysis patients who performed exercises while in dialysis improved personal well-being, raised their awareness of the importance of physical activity and improved the functional capacity of the patients who exercised.

Introduction

Functional capacity makes it possible to evaluate the health of patients with chronic diseases, such as chronic kidney disease.[1,2] The aetiology of chronic kidney disease and the advance of other co-morbidities while patients are in haemodialysis (HD) may lead to physical incapacity, emotional and social problems for patients[1,3] and affect their quality of life[3] or their capacity to carry out basic everyday life activities.[4,5]

Physical exercise can be adapted to any type of patient (the elderly, diabetics, patients who have been in HD for a long time, etc.) giving rise to physiological, functional and psychological benefits.[6,7] The effects that have been studied the most are those of habitual moderately intense aerobic activities. These benefits include slowing down the functional deterioration of patients,[8] increasing muscle strength and functional capacity,[9] improvements in the symptoms of depression, anxiety[3,10] and mood. Such exercise also improves the quality of life of individuals of all ages and circumstances.[6]