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Original article

Musculoskeletal pain in patients with chronic kidney disease☆

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ABSTRACT

Introduction: Chronic musculoskeletal pain (CMP) is a very common symptom in patients with chronic kidney disease (CKD), and is associated with a significant deterioration in quality of life.

Aims: To determine the prevalence and clinical characteristics associated with CMP in patients with advanced CKD not on dialysis, and to analyse their relation with other uraemic symptoms and their prognosis significance.

Materials and methods: Cross-sectional study to analyse the uraemic symptoms of an unselected cohort of patients with CKD stage 4–5 pre-dialysis. In order to characterise patients with CMP, demographic and anthropometric data were collected, as well as data on comorbidities and kidney function. In addition, inflammatory parameters, uric parameters, bone mineral metabolism including 25-hydroxycholecalciferol (25-OHCC), creatine kinase and drugs of potential interest including allopurinol, statins and erythropoiesis-stimulating agents were recorded.

Results: The study group consisted of 1169 patients (mean age 65 ± 15 years, 54% male). A total of 38% of patients complained of CMP, and this symptom was more prevalent in women than in men (49 vs. 28%; $P < .0001$). Muscle weakness, pruritus, muscle cramps, ecchymosis, insomnia, oedema and dyspnoea were the most common symptoms associated with CMP. There were no significant associations between serum levels of creatine kinase, 25-OHCC, treatment with allopurinol, statins or erythropoiesis-stimulating agents and CMP. The female gender, elderly age, obesity, comorbidity (mainly diabetes, heart failure or COPD), and elevated levels of inflammatory markers (C-reactive protein and non-neutrophilic leukocytes) were the best determinants of CMP.

While patients with CMP showed a worse survival rate, a multivariate analysis adjusted for demographic data ruled out the independent association of CMP with mortality.

Conclusions: CMP is highly prevalent in patients with advanced CKD and is associated with other common symptoms of chronic uraemia. As with the general population, elderly age,

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the female gender, obesity and some comorbid conditions are the best determinants of CMP. Increased inflammatory markers commonly observed in patients with CMP may have a relevant role in its pathogenesis.

Dolor músculo-esquelético en pacientes con enfermedad renal crónica

Palabras clave:
Enfermedad renal crónica
Dolor músculo-esquelético
Inflamación
Síntomas urémicos

RESUMEN

Introducción: El dolor músculo-esquelético crónico (DMEC) es un síntoma muy frecuente en pacientes con enfermedad renal crónica (ERC), y contribuye de forma importante al deterioro de la calidad de vida.

Objetivos: Determinar la prevalencia y características clínicas asociadas al DMEC en pacientes con ERC avanzada no en diálisis, analizar su relación con otros síntomas urémicos y su significado pronóstico.

Material y métodos: Estudio transversal en el que se analizó la sintomatología urémica de pacientes no seleccionados remitidos por ERC estadio 4 y 5 prediálisis. Para caracterizar aquellos que presentaban DMEC, además de los datos demográficos, antropométricos, la comorbilidad y la función renal, también se recogieron parámetros de inflamación, ácido úrico, metabolismo óseo-mineral incluyendo 25-hidroxi-colecalciferol (25-OHCC), creatincinasa, y fármacos de potencial interés como alopurinol, estatinas y agentes estimulantes de eritropoyetina.

Resultados: Se incluyó a 1.169 pacientes con edad media de 65 ± 15 años; el 54% eran hombres. Un 38% de los pacientes refería DMEC, y este síntoma fue más frecuente en mujeres que en hombres (49 vs. 28%; $p < 0{,}0001$). La debilidad muscular, prurito, calambres, equimosis, insomnio, edemas y disnea fueron los síntomas más frecuentemente asociados al DMEC. No se observaron asociaciones significativas entre niveles de creatincinasa, 25-OHCC, tratamiento con alopurinol, estatinas o agentes estimulantes de eritropoyetina con DMEC. Los mejores determinantes de DMEC fueron: mujer, mayor, obesa, con comorbilidad (sobre todo diabetes, insuficiencia cardiaca o EPOC), y marcadores de inflamación elevados (proteína C reactiva y leucocitos no neutrófilos).

Aunque los pacientes con DMEC tenían una peor supervivencia, un análisis multivariante con ajuste simple a datos demográficos descartó que el DMEC fuera un determinante independiente de la mortalidad.

Conclusiones: El DMEC es muy prevalente en pacientes con ERC avanzada, y se asocia con otros síntomas comunes de la uraemia crónica. Al igual que en la población general, características como sexo femenino, edad avanzada, obesidad y comorbilidad están más frecuentemente asociados al DMEC. La elevación de los marcadores de inflamación asociada al DMEC podría ser un hallazgo relevante para explicar su patogenia.

Introduction

The symptoms of chronic kidney disease (CKD) are non-specific and very variable. Chronic musculoskeletal pain (CMP) is a very common symptom in CKD[1,2] and has a significant effect on the perception of health and quality of life of patients who suffer from it.[3,4]

Previous studies have shown that, despite the high prevalence of CMP, it is very often undervalued and is usually attributed to different processes, related or not to chronic uraemia, such as bone and mineral disorders, neuritis, or inflammatory or degenerative osteoarthritis.[4–7]

The CMP in CKD is often associated with other symptoms attributable to uraemia, such as insomnia and fatigue,[1–3] or to psychiatric disorders such as anxiety or depression.[8] These patients need to take large doses of painkillers which, with the altered drug metabolism associated with uraemia, increases the risk of adverse reactions.[9,10]

Despite the importance of CMP in CKD, very few studies have analysed the clinical characteristics and determining factors. A better understanding of the origin and characteristics of the pain could help us to design more specific and effective treatment strategies.

The aims of this study were to determine the prevalence of CMP in patients with advanced CKD (ACKD) and to