

MUSCULOSKELETAL MANIFESTATIONS IN HEMODIALYSIS PATIENTS AND ASSOCIATED FACTORS

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OBJECTIVES

Dialysis related osteoarthropathy and Chronic Kidney Disease-Mineral and Bone Disorders (CKD-MBD), are still a major problem in long term hemodialysis patients. Their frequency and severity increase with the length of the dialysis especially in those who are undergoing hemodialysis for more than 30 years.

The aim of this study was to estimate the prevalence of musculoskeletal manifestations in hemodialysis patients and to identify some of their predictive factors.

METHODS

This is a cross-sectional study. All adult patients in the center were included (N=89). For each patient, we filled a data collection sheet including basic demographic characteristics, musculoskeletal symptoms, biologic parameters and treatments.

Musculoskeletal symptoms were classified into syndromes and diagnostic categories: Osteoarthritis, Fractures, Tendinopathies, Carpal Tunnel Syndrome, Crystal deposition disease and Others.

RESULTS

N	89
Age (years±SD)	67.5±12.6
Sex ratio (M/F)	49/39
Age at the start of hemodialysis year(±SD)	61.5±14.6
Dialysis vintage (years±SD)	5.7 ± 5.37
Number of sessions/ week	
2 times	25 (28.1%)
3 times	64 (71.9%)
Diagnostic nephropathy	
Diabetes	27 (30.3%)
Hypertension	26 (29.2%)
Chronic glomerulonephritis	13 (14.6%)
Polycystic kidney disease	10 (11.2%)
Chronic interstitial nephropathy	7 (7.9%)
Others	6 (6.7%)
Profession	
active	12
inactive	77
Oral calcium (mg/day±SD)	1302.6±778
Sevelamer (mg/day± SD)	2301.54±1609
Vitamin D (IU/week±SD)	10588.25 ±5557.16
Alfacalcidol (mcg/day±SD)	0.48±0.4

Table1. Patients characteristics

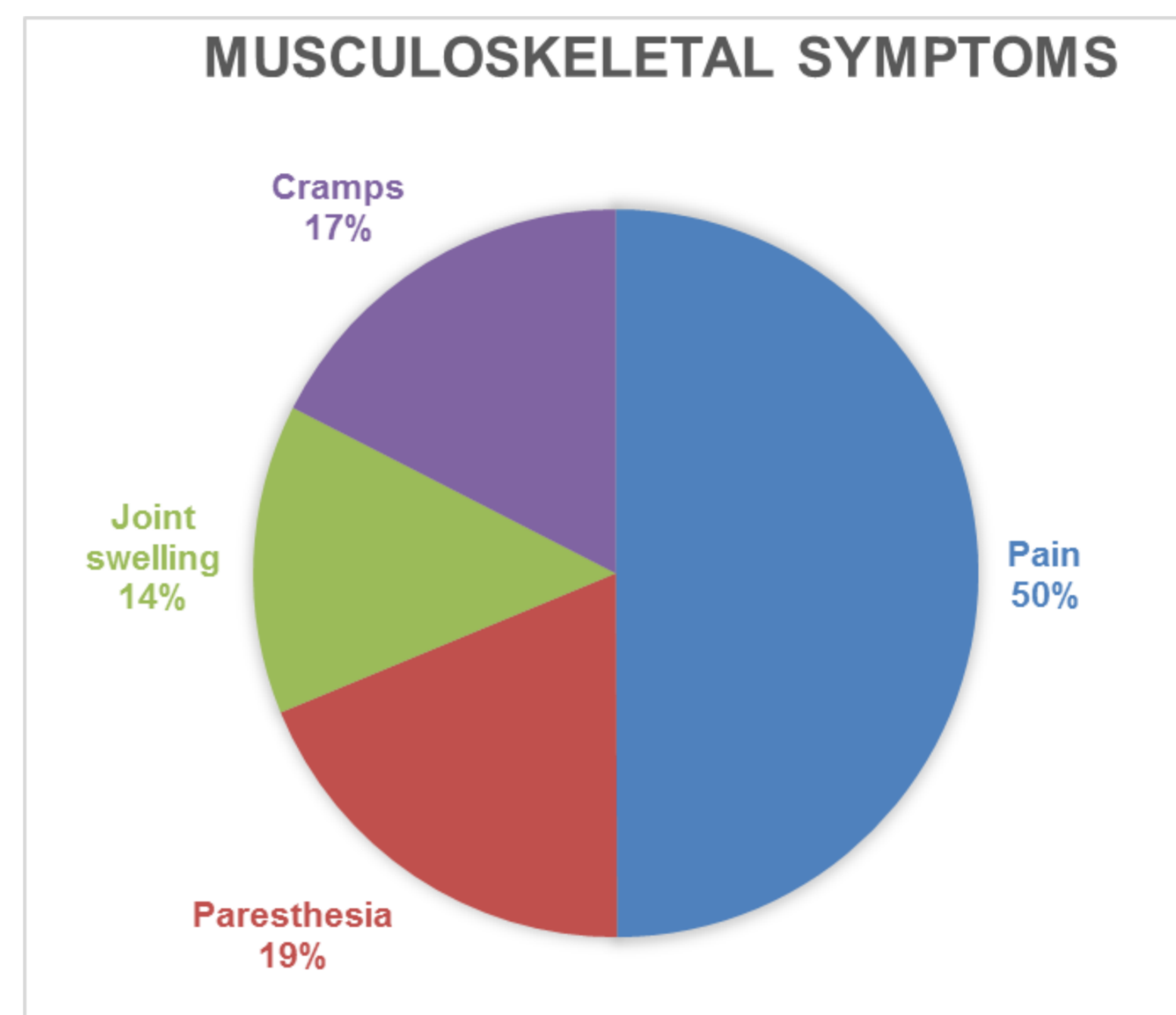


Figure 1. Musculoskeletal symptoms distribution

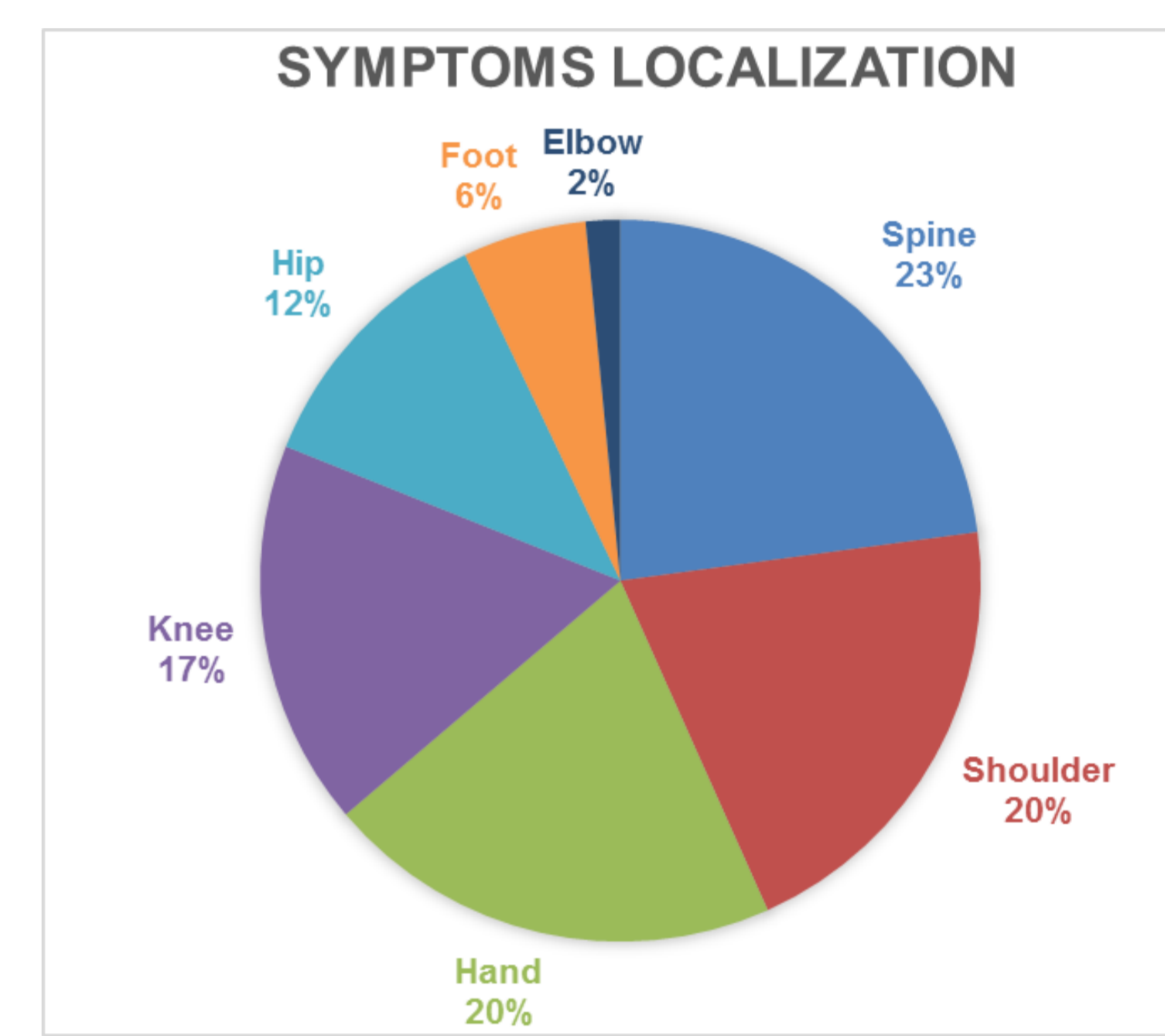


Figure 2. Symptoms localization

Musculoskeletal symptoms were reported by 76.4% of the patients. 25.8% of the patients had already seen a rheumatology, orthopedics or neurosurgery specialist. Multivariate analysis showed that musculoskeletal symptoms were significantly related to the dialysis vintage and age ($p=0.044$, $p=0.035$) respectively.

Diagnosis	N	Main Sites	Associated Factors
Osteoarthritis	53.9%	Spine (32.6%) Knee (18%)	Dialysis vintage ($p=0.015$) Calcium intake ($p=0.019$)
Fractures	31.1%	Vertebral (7.9%), Shoulder (5.6%),	Dialysis vintage ($p=0.042$) Age ($p=0.015$)
Tendinopathy	22.5%	Shoulder (8.8)	Dialysis vintage ($p=0.043$)
Carpal Tunnel Syndrome	18%		Dialysis vintage ($p=0.002$) Serum phosphorus ($p=0.02$)
Chondrocalcinosis	9%		Dialysis vintage ($p=0.044$)

Table2. Main diagnosis description and associated factors

CONCLUSION

The prevalence of the musculoskeletal manifestations is high (76.4%) in the hemodialysis population. Pain is the most frequent symptom to be reported (44.9%). The dialysis vintage is a predictive factor of the onset of these manifestations and is particularly associated with the diagnosis of osteoarthritis, carpal tunnel syndrome, tendinopathy, fractures and chondrocalcinosis. Carpal tunnel syndrome may also be associated to the serum phosphorus, this finding needs to be confirmed by further studies on a larger scale.

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