

Acute Crystal arthritis – a leading cause of hospital admission, yet poorly recognised and thus mistreated

Abuelmagd Abdalla¹, Jonathan Leech², Mohammad Khalid¹, Geraldine McCarthy¹

¹ Rheumatology Dept. Mater Misericordiae University Hospital, Dublin

² Cellular Pathology Dept. Mater Misericordiae University Hospital, Dublin

Introduction

Crystal arthritis is the commonest inflammatory arthritis in adults¹. A common mimic is septic arthritis². Without appropriate synovial fluid analysis, a mis-diagnosis of sepsis can be made with resultant unnecessary hospitalization, inappropriate intravenous antibiotic therapy and excess cost³. Such cases are frequently described as ‘culture-negative’ septic arthritis.

Objective

To examine and analyse the cases of acute arthritis requiring acute hospital admission in our institution.

Methods

A retrospective review of medical records between Jan to Dec 2019 at the Mater Hospital, Dublin, was carried out. All cases of acute arthritis requiring acute hospital admission were identified. Cases treated at the Emergency Department, acute medical unit or outpatients which did not require hospital admission were excluded.

Table.1 patient’s characteristics and main findings

	Crystal Arthritis	Septic Arthritis	Other Arthritis
Number	16	8	6
Age (median)	85.5	47	82.5
Female %	43.8	50	50
Knee site %	94	62.5	100
CRP (median)	157.5	186	37
WCC (mean)	11.4	10.3	8.3
SF-WCC (median)	11,465	14,860	7,545
SF-PMN% (mean)	89.9	92.3	87.3
Polarizing microscopy performed	14/16	4/8	6/6
Hospital days (median)	5.5	14	6

Table.2 cases of crystal arthritis

	Pseudogout	Gout
Number	11	5
Age (median)	86	66
Female %	36	60
Chondrocalcinosis %	73	-
Crystals performed (n/total)	10/11	4/5
Crystals identified by Lab (n/total)	None	3/5

Results

30 patients were identified during this period, 16 (53%) had an ultimate diagnosis of crystal arthritis, 8 (27%) had confirmed septic arthritis and 6 (20%) had other arthritides (e.g. haemarthrosis). The median age for crystal arthritis was significantly higher (85.5 y) compared to septic arthritis (47 y). Apart from age, the clinical profile and biomarkers for crystal and septic arthritis were comparable (table.1). The majority of crystal arthritis cases were due to pseudogout (11/16 – table 2), ultimately diagnosed by rheumatology. Septic arthritis led to more days in hospital than crystal arthritis (median 14 vs 5.5 days). Crystal analysis via the pathology department pathway was positive for 3/5 cases of gout and 0/11 cases of pseudogout. All 30 patients received IV antimicrobial therapy for presumed septic arthritis.

Conclusion

This cross-sectional retrospective study showed crystal arthritis, especially pseudogout, to be the commonest cause of admission with acute arthritis particularly among elderly patients.

Accurate diagnosis by synovial fluid analysis with appropriate equipment is extremely useful in the assessment of these cases.