

Integrated management of polyarthralgia with metabolic risk factors, hyperuricemia, and gastrointestinal complaints in an elderly male: a case report.

Abstract

Introduction: Polyarthralgia in elderly individuals commonly presents as a multifactorial clinical condition involving degenerative joint changes, metabolic derangements, altered uric acid metabolism, gastrointestinal dysfunction, and low-grade chronic inflammation associated with aging. Comprehensive clinical assessment is essential because musculoskeletal symptoms in older adults often coexist with metabolic and digestive disturbances that may influence disease progression and therapeutic response.

Case Presentation: A 77-year-old male presented with complaints of multiple joint pains, bilateral knee pain, acidity, constipation, frequent urination, and abdominal discomfort. The symptoms had gradually progressed and were affecting daily activities and general comfort. Laboratory investigations revealed mild hyperuricemia, borderline elevated blood glucose, low high-density lipoprotein cholesterol, mild anemia, and pyuria, while renal and hepatic function parameters remained within normal physiological limits. No evidence of renal impairment or acute inflammatory pathology was observed.

Intervention: The patient was managed with an integrative therapeutic regimen consisting of oral herbal formulations along with medicated syrup aimed at improving joint symptoms, metabolic regulation, and gastrointestinal function. Treatment selection was based on symptomatic presentation and laboratory findings, with emphasis on improving digestion, bowel regularity, and reducing inflammatory discomfort.

Outcome: During follow-up, the patient reported reduction in joint pain, improvement in knee discomfort, decreased acidity, better bowel movements, and overall improvement in general well-being. No adverse drug reactions or treatment-related complications were observed during the treatment period.

Conclusion: This case highlights the importance of multimodal evaluation in elderly patients presenting with polyarthralgia associated with metabolic and gastrointestinal overlap. Integrative management may offer symptomatic benefit when treatment is individualized according to systemic clinical findings. Further systematic clinical studies are required to establish effectiveness in similar geriatric presentations.

Keywords: Polyarthralgia, elderly, hyperuricemia, integrative management, constipation, metabolic disturbance, case report.

1. Introduction

Polyarthralgia in patients with hyperuricemia complicated by metabolic disturbances and type 2 diabetes mellitus (T2DM) represents a multifactorial clinical challenge characterized by interrelated pathophysiological mechanisms and overlapping metabolic derangements.

Hyperuricemia, defined by elevated serum uric acid (SUA) levels, is a well-recognized risk factor for gout—a form of inflammatory arthritis marked by episodic, often severe joint pain due to monosodium urate crystal deposition. In patients with T2DM and metabolic disturbances such as insulin resistance, dyslipidemia, and obesity, polyarthralgia can manifest not only from classic gouty arthritis but also from a broader spectrum of crystal-independent inflammatory and metabolic processes affecting joints.

Insulin resistance inherent in T2DM impairs renal uric acid excretion, leading to sustained elevations in SUA and subsequent hyperuricemia [1-2]. This hyperuricemia, in turn, exacerbates insulin resistance by promoting oxidative stress, chronic low-grade inflammation, endothelial dysfunction, and adipocyte dysregulation—all of which contribute to metabolic syndrome components and joint tissue damage [2-3].

Metabolic syndrome further amplifies this interplay. Obesity and dyslipidemia facilitate secretion of proinflammatory cytokines and adipokines that contribute to systemic inflammation, enhancing both joint and vascular pathology [4]. Hyperuricemia may itself induce mitochondrial oxidative stress and impair insulin-dependent nitric oxide signaling in endothelial cells, propagating joint injury and metabolic disturbances[4].

Clinically, patients often experience polyarthralgia involving multiple joints with fluctuating patterns of pain, swelling, and stiffness. Although gout attacks classically affect a single joint, polyarticular involvement can occur, especially in those with longstanding hyperuricemia and comorbid metabolic disorders.

Ayurveda plays a notable role in managing polyarthrititis associated with hyperuricemia, particularly in cases like gouty arthritis, which is a form of inflammatory arthritis caused by elevated uric acid levels leading to monosodium urate crystal deposition in joints. The

Ayurvedic approach is holistic, integrating herbal formulations, lifestyle modifications, and specific therapeutic procedures aimed at balancing bodily doshas, reducing inflammation, and improving joint function.

Ayurveda, one of the oldest holistic health systems, emphasizes the interdependency of mind, body, and spirit to restore harmony and prevent disease. Ayurvedic treatments are recognized for their safety and minimal side effects while providing therapeutic efficacy for chronic inflammatory conditions including arthritis [5].

Several Ayurvedic herbs have properties that inhibit enzymes involved in uric acid production (like xanthine oxidase), promote uric acid excretion, and have anti-inflammatory effects. For example, polyphenols such as chlorogenic acid, found abundantly in traditional medicines, have been shown to reduce serum uric acid by inhibiting xanthine oxidase and suppress pro-inflammatory cytokines such as IL-1 β , IL-6, and TNF- α , thus alleviating symptoms of gouty arthritis [6]. These mechanisms reduce joint inflammation and swelling typical of polyarthritis induced by hyperuricemia. Ayurveda also employs external therapies and physical interventions to improve symptoms. These include massages, poultices, and Panchakarma detoxification processes that are thought to remove toxins and restore bodily balance. This multimodal approach contributes to reducing joint pain, stiffness, and inflammation associated with gouty arthritis and other urate crystal-mediated polyarthropathies. Ayurvedic herbs containing flavonoids and polyphenols target these pathways to lower serum uric acid levels and relieve inflammation, similar to emerging natural product therapies being researched globally[7-8].

This case is unique due to its comprehensive integrative approach addressing the complex interplay of polyarthralgia with concurrent metabolic risk factors, mild hyperuricemia, and gastrointestinal complaints in an elderly patient. Unlike typical presentations focusing solely on gout or isolated joint pathology, this report highlights the multifactorial nature of musculoskeletal symptoms influenced by metabolic disturbances such as prediabetes, low HDL cholesterol, and mild anemia, alongside digestive dysfunctions like acidity and constipation. The case underscores the importance of a multimodal assessment and individualized treatment strategy combining herbal formulations and supportive therapies to target systemic inflammation, metabolic imbalance, and digestive health simultaneously. This holistic management reflects Ayurvedic principles integrated with modern clinical evaluation,

offering symptomatic relief without adverse effects, which is rarely documented in standard clinical case reports.

Patient Information

A 77-year-old male patient weighing 64 kg presented with chronic musculoskeletal and gastrointestinal complaints affecting daily comfort and mobility. The patient reported polyarthralgia involving multiple joints, with predominant bilateral knee joint pain that had gradually progressed over time and interfered with routine physical activity. Associated symptoms included acidity, constipation, gastroesophageal reflux symptoms, frequent urination, lower limb discomfort associated with varicose veins, and gastrointestinal uneasiness suggestive of irritable bowel tendency. A known history of prediabetic metabolic status was present, although no regular pharmacological treatment for glycemic control was being taken. There was no documented history of hypertension, overt diabetes mellitus, chronic kidney disease, inflammatory arthritis, or other major systemic illness. Family history of hereditary rheumatological, metabolic, or genetic disorders was not clearly contributory. Psychosocial history was non-significant, with no evidence of psychiatric illness, cognitive impairment, sleep disturbance, or substance abuse. No major prior long-term intervention for the present complaints had been undertaken before consultation; occasional symptomatic measures may have been used previously, but no sustained improvement was achieved.

Clinical Findings

On general physical examination, the patient was found to be hemodynamically stable and clinically conscious, cooperative, and oriented, with no evidence of acute systemic distress. His general condition was satisfactory at the time of evaluation, and vital parameters were within acceptable physiological limits for age. The patient weighed 64 kg and appeared ambulatory with preserved sensorium. No pallor, icterus, cyanosis, clubbing, generalized edema, lymphadenopathy, or dehydration was observed during examination. Respiratory effort was normal, and no obvious signs of cardiovascular compromise were noted. Mild discomfort during movement, particularly involving bilateral knee joints, was observed in relation to musculoskeletal complaints. Prominent superficial venous dilatation suggestive of varicose veins was noted in the lower limbs. No acute abdominal tenderness or organomegaly was detected clinically. Overall systemic examination suggested stable general health status without evidence of acute metabolic or inflammatory decompensation.

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126 **Timeline**

127 The clinical timeline of the present case is as follows: On **28/02/2026**, the patient underwent
128 initial clinical evaluation for chronic musculoskeletal and gastrointestinal complaints,
129 including polyarthralgia, bilateral knee pain, acidity, constipation, frequent urination, and
130 lower limb discomfort associated with varicose veins. Baseline laboratory investigations
131 performed on the same day revealed mild hyperuricemia, borderline dysglycemia, low HDL
132 cholesterol, mild anemia, and pyuria, while liver and kidney function parameters remained
133 within acceptable physiological limits. Based on clinical assessment and laboratory findings,
134 an integrative therapeutic regimen consisting of oral herbal formulations and syrup was
135 initiated. A repeat clinical and laboratory evaluation was conducted on **30/03/2026**, during
136 which the patient reported symptomatic improvement, particularly reduction in joint
137 discomfort, improvement in bowel habits, decreased acidity, and better overall comfort,
138 indicating a favorable response to the prescribed intervention.

Date	Clinical Event	Details
28/02/2026	Initial clinical evaluation	Patient presented with polyarthralgia, bilateral knee pain, acidity, constipation, frequent urination, varicose veins, and gastrointestinal discomfort; general physical examination performed.
28/02/2026	Baseline laboratory investigations	Blood glucose profile, serum uric acid, lipid profile, liver function tests, kidney function tests, complete blood count, and urine examination were performed.
28/02/2026	Clinical assessment and intervention	Polyarthralgia associated with mild hyperuricemia, metabolic imbalance, and digestive disturbance was clinically assessed; oral herbal formulations and syrup were prescribed.
30/03/2026	Follow-up evaluation	Repeat clinical assessment and investigations performed after approximately 4 weeks of therapy.
30/03/2026	Clinical outcome	Improvement observed in joint pain, knee discomfort, acidity, constipation, and general well-being.

139 **Table 01: Timeline of the case.**

140 **Diagnostic Assessment**

Investigation	Parameter	Observed Value	Reference Interpretation
Hematology (CBC)	Hemoglobin	12.5 g/dL ↓	Mildly reduced
	RBC count	$4.06 \times 10^6/\mu\text{L}$ ↓	Mildly reduced
	Hematocrit	38.7% ↓	Mildly reduced
	RDW-CV	15.5% ↑	Mildly increased
	Platelet count	$151 \times 10^3/\mu\text{L}$	Borderline normal
	ESR	14 mm/hr	Within normal range
Interpretation			Suggestive of mild normocytic anemia
Glycemic Profile	Fasting blood sugar	94 mg/dL	Normal
	Postprandial blood sugar	108 mg/dL	Normal
	HbA1c	6.3% ↑	Prediabetic range
Interpretation			Prediabetic metabolic status
Lipid Profile	Total cholesterol	126 mg/dL	Within normal range
	Triglycerides	118 mg/dL	Within normal range
	HDL cholesterol	32 mg/dL ↓	Reduced
	LDL cholesterol	70 mg/dL	Within acceptable range
Interpretation			Low HDL indicates increased cardiometabolic risk

Renal Function Tests	Creatinine	0.95 mg/dL	Normal
	Urea	37.43 mg/dL	Normal
	eGFR	82 mL/min/1.73 m ²	Preserved renal function
Interpretation			Renal function preserved
Serum Uric Acid	Uric acid	7.98 mg/dL ↑	Mildly elevated
Interpretation			Mild hyperuricemia likely contributing to joint pain tendency
Liver Function Tests	Bilirubin total	0.61 mg/dL	Normal
	AST	26 U/L	Normal
	ALT	35 U/L	Normal
	ALP	84 U/L	Normal
	GGT	15.24 U/L	Normal
Interpretation			No active hepatic dysfunction
Urine Examination	Appearance	Slightly turbid	Mild abnormality
	Pus cells	6–8 /HPF ↑	Elevated
	RBC	Nil	Normal
	Protein	Negative	Normal
	Glucose	Negative	Normal
Interpretation			Mild pyuria suggestive of urinary inflammatory change

141 **Table 02: Laboratory investigation before the treatment.**

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143 **Therapeutic Intervention**

144 Based on the clinical presentation of polyarthralgia associated with digestive disturbance,
 145 mild hyperuricemia, and metabolic imbalance, an integrative oral herbal treatment regimen
 146 was initiated. The prescribed intervention included a Gond Siyah Powder administered in
 147 divided doses with lukewarm water, aimed at improving musculoskeletal health. In addition,
 148 Capsule P-Care was prescribed at one capsule twice daily after food with lukewarm water for
 149 supportive management of joint discomfort and systemic symptoms. Capsule T-Care was also
 150 advised at one capsule twice daily with lukewarm water as part of the oral regimen. A further
 151 digestive syrup formulation *Pachan-care syrup* was prescribed in measured doses, likely
 152 intended to address acidity, constipation, and gastroesophageal reflux symptoms. The
 153 treatment was advised for approximately four weeks, with instructions for regular intake and
 154 follow-up assessment.

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Medicine	Dose	Frequency	Mode of Administration	Probable Therapeutic Purpose
Gond Siyah Powder	½ teaspoon	Twice daily	Oral	Improve musculoskeletal health
Capsule P-Care	1 capsule	Twice daily	After food with lukewarm water	Joint pain support
Capsule T-Care	1 capsule	Twice daily	With lukewarm water	Systemic support / anti-inflammatory role
<i>Pachan-care syrup</i>	10 mL	Twice daily	Oral	Relief in acidity, constipation, reflux

156 **Table 03: Administration of Therapeutic Intervention**157 **Follow-Up and Outcome**

Parameter	Baseline Value (28/02/2026)	Follow-up Value (30/03/2026)	Clinical Interpretation

HbA1c	6.3%	5.9%	Improvement in glycaemic status from prediabetic range toward better metabolic control
Serum Uric Acid	7.98 mg/dL	6.8 mg/dL	Reduction in hyperuricemia indicating decreased metabolic contribution to joint pain
Polyarthralgia	Multiple joint pain present	Reduced intensity of pain	Symptomatic improvement in musculoskeletal discomfort
Bilateral knee pain	Persistent pain during movement	Pain reduced	Improved joint comfort and mobility
Acidity	Present	Reduced	Improvement in upper gastrointestinal symptoms
Constipation	Present	Improved bowel regularity	Better digestive function
Frequent urination	Present	Reduced frequency	Improvement in urinary comfort

No adverse event documented.

Discussion

Polyarthralgia in elderly individuals often reflects the combined influence of degenerative musculoskeletal changes, low-grade chronic inflammation, metabolic dysregulation, and altered digestive physiology. In the present case, symptomatic improvement observed after four weeks may be attributed to the complementary pharmacological actions of the prescribed formulations, including P-Care Advance, T-Care Advance, Gond Siyah Powder, and Pachan Care Advance Syrup.

P-Care Advance contained *Extractumberberis* (*Berberisaristata* derivative), *Astragalusgummifer*, *Quercusinfectoria*, *Azadirachta indica*, and mineral-origin ingredients such as red ochre and Ayurvedic compound fractions. The presence of berberine-containing *Berberis* species is particularly relevant because berberine has demonstrated anti-

inflammatory, glucose-lowering, and uric acid-modulating actions [9]. Experimental and clinical studies suggest that berberine improves insulin sensitivity, reduces inflammatory cytokines, and suppresses xanthine oxidase activity [10-12], thereby potentially contributing to both HbA1c reduction (6.3% to 5.9%) and serum uric acid decline (7.98 mg/dL to 6.8 mg/dL) observed in this case. Berberine also improves gut microbiota regulation [13], which may have contributed to improvement in constipation and digestive discomfort.

Azadirachta indica present in P-Care may further support anti-inflammatory and metabolic regulation[14-15]. Neem-derived bioactive compounds have shown antioxidant and anti-inflammatory actions through inhibition of oxidative stress pathways and inflammatory mediators, which may indirectly reduce pain perception in chronic joint disorders [16-17]. *Quercus infectoria* possesses tannins with astringent and mucosal protective actions that may have supported gastrointestinal stability [18].

The musculoskeletal improvement is likely reinforced by T-Care Advance, which contains *Boswellia serrata*, *Curcuma longa*, *Withania somnifera*, *Zingiber officinale*, and *Colchicum luteum*. *Boswellia serrata* inhibits leukotriene synthesis and has demonstrated significant efficacy in reducing osteoarthritic pain and stiffness in randomized clinical trials[19-20]. *Curcuma longa* provides curcumin, which suppresses NF-κB-mediated inflammation and has shown clinical benefit in osteoarthritis comparable to non-steroidal anti-inflammatory drugs [21]. *Colchicum luteum* may additionally contribute to controlling urate-related inflammatory activity, relevant in mild hyperuricemia-associated joint discomfort[22].

Gond Siyah Powder contributed anabolic and restorative support through ingredients such as *Withania somnifera*, *Chlorophytum borivilianum*, *Nigella sativa*, and *Piper nigrum*. These ingredients may improve systemic vitality, digestive efficiency, and phytochemical bioavailability, particularly through piperine-mediated enhancement of absorption[23-27].

Pachan Care Advance Syrup appears to have addressed the digestive component effectively through *Foeniculum vulgare*, *Mentha piperita*, *Cuminum cyminum*, *Zingiber officinale*, and *Trachyspermum ammi*, all of which possess proven carminative, anti-flatulent, and pro-digestive actions[28-29]. Improvement in acidity, constipation, and reflux symptoms likely reduced gastrointestinal inflammatory burden and improved overall comfort.

Thus, the observed benefit in this elderly patient appears to result from a multi-target intervention addressing inflammation, metabolism, uric acid imbalance, and digestive

dysfunction simultaneously, which is particularly relevant in geriatric cases where isolated symptom-focused treatment may be insufficient.

Patient Perspective

Before starting treatment, I had pain in many joints, especially both knees, which made my daily activities uncomfortable. I also had acidity, constipation, and stomach discomfort, which affected my appetite and general comfort. After taking the prescribed medicines regularly, my digestion became better, bowel movements improved, and the pain in my joints and knees reduced. I felt more comfortable in day-to-day activities and overall experienced improvement in my health.

Conclusion: This case demonstrates that elderly patients presenting with polyarthralgia often have associated metabolic and gastrointestinal disturbances that may contribute to symptom persistence and clinical complexity. In the present case, an integrative herbal therapeutic regimen was associated with symptomatic improvement in joint pain, bilateral knee discomfort, digestion, bowel regularity, and general well-being, along with reduction in serum uric acid and improvement in glycaemic status.

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