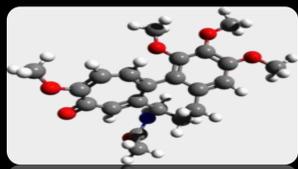


# Gout Management Beyond Prescription Writing: The Role of The Pharmacist

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**Patient-reported conflict in advice RE: Gout Treatment**  
Urate lowering therapy (ULT) is recommended for long-term gout. Flares are common when starting ULT thus co-prescription of low dose colchicine is recommended for the first 6 months of ULT. Patients reported confusion between advice of rheumatologist & pharmacist about colchicine use.



**Research of Pharmacist Knowledge**  
Pharmacists play a key role in community gout education. We investigated pharmacist knowledge of gout treatment. A ten-question questionnaire and non-random sampling was used.



**Identify Knowledge Gaps**  
n=173 pharmacist responded. 63% did not know that a xanthine oxidase inhibitor combined with a prophylactic agent was first line therapy. 22.5% of respondents knew patients were advised to take colchicine continuously for six months with ULT. Only 28.9% knew that colchicine twice daily in combination with ULT acted as a prophylaxis for gout flares



**Develop Education Intervention**  
An educational intervention was developed between a consultant rheumatologist and a general practitioner who was a former community pharmacist in the form of a 13-minute video tutorial on pharmaceutical gout management. The educational video was shared on PharmaBuddy, the online resource for Irish pharmacists



**Assess Intervention**  
The effectiveness of this intervention was assessed via the same questionnaire in a cohort of n=53 (n=25 intervention group; n=28 control group of pharmacists who had not watched the video). Data was analysed via frequency analysis using Pearson's Chi-Square test for association between groups.

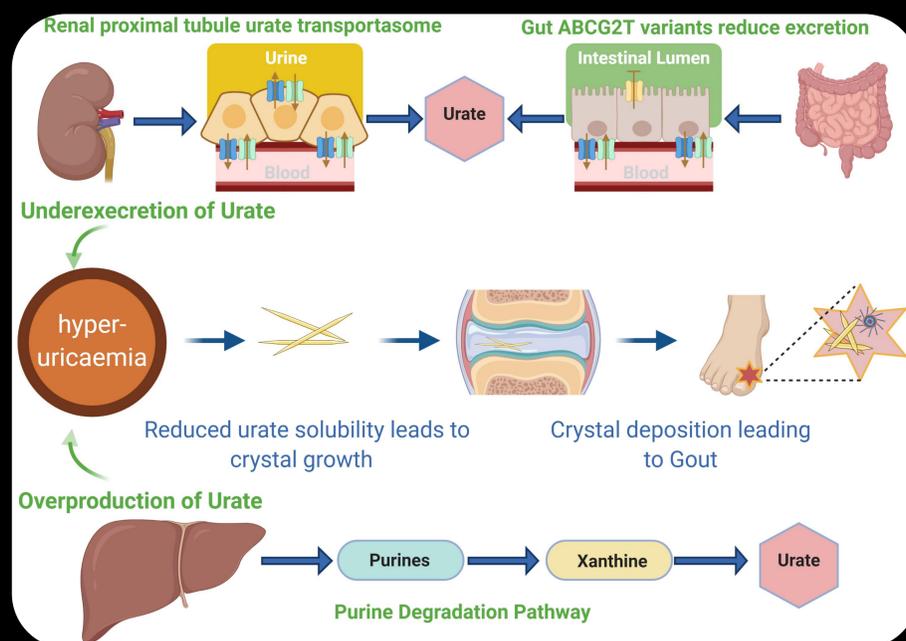


**Increased Pharmacist Knowledge of Gout Treatment**  
Gout management recommendations can be impeded if translation into pharmacy practice is neglected. We developed a low-cost educational intervention that can greatly improve their knowledge of gout management and in turn empower patients to assume self-management of gout.

## Abstract

## Knowledge of Gout Management Survey

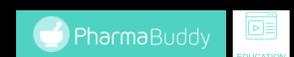
Question	Answer Options	Frequency
Where is your primary area of practice?	Community	155 (89.6%)
	Hospital	14 (8.1%)
	Academia	1 (0.6%)
	Industry	1 (0.6%)
	Other	2 (1.2%)
Urate-lowering therapy (ULT) is targeted to serum urate level?	True	126 (72.8%)
	False	17 (9.8%)
	Don't Know	28 (16.2%)
First-line therapy for gout involves a combination of a xanthine oxidase inhibitor (e.g. allopurinol) combined with a prophylactic agent (e.g. colchicine)	True	61 (35.3%)
	False	109 (63.0%)
Colchicine at a dose of 0.5mg twice daily should be given in combination with urate lowering therapy (ULT) for at least 6 months after initiation of ULT, as a prophylaxis for gout flares	True	50 (28.9%)
	False	109 (63.0%)
It is common for gout to flare when...	Starting ULT	66 (38.2%)
	Stopping ULT	23 (13.2%)
	Increasing ULT	3 (1.7%)
Patients should stop ULT during a gout attack	True	42 (24.3%)
	False	116 (67.1%)
	Don't Know	15 (8.7%)
	True	39 (22.5%)
Patients are advised to take colchicine continuously for six months or longer after initiation of ULT	True	117 (67.4%)
	False	17 (9.8%)
Patients should dose-reduce rather than stop colchicine if they experience side-effects (e.g. diarrhoea)	True	77 (44.5%)
	False	72 (41.6%)
	Don't Know	24 (13.9%)
Which information sources for colchicine do you find helpful?	BNF	148 (85.5%)
	SPC	100 (57.8%)
	Guidelines (e.g. EULAR or ACR)	15 (8.7%)
	Agree	40 (23.1%)
Cost of gout medication is a factor in patient non-adherence	Disagree	87 (50.3%)
	Neither Agree nor Disagree	46 (26.6%)
	Munster	68 (39.3%)
What county do you work in?	Dublin	38 (22.0%)
	Leinster (Excl Dublin)	33 (19.1%)
	Connaught	22 (12.7%)
	Ulster	3 (1.7%)
	Not Specified	9 (5.2%)



## Pathophysiology of Gout

The goal of urate lowering therapy is to reduce serum Uric Acid (sUA) levels below its saturation point, thereby preventing crystal formation and deposition. The rate of crystal reduction is dependent upon both the total crystal load and reduction in sUA. ULT initiation can cause rapid dissolution of crystal deposits and may lead to increased flare rate and associated pain due to the removal of protein deposits protecting the underlying surface from attack by inflammatory cells. Thus an anti-inflammatory prophylaxis, such as Colchicine, is recommended for the first six months following initiation of ULT

## Education Intervention



13 minute Tutorial on the management of gout covering the following topics:

What is the acute treatment of gout?

In the acute treatment of gout, when would you choose one treatment over another?

When should urate lowering therapy be started in patients?

When would you choose allopurinol over febuxostat?

When would you choose febuxostat over allopurinol?

When starting urate lowering therapy, are there any points to be taken into consideration?

What is the evidence base for continuing regular colchicine in patients for 6 months after initiation of ULT?

What are the main interactions to be mindful of when starting urate lowering therapies?

Discuss the adverse effects of medications used in acute management of gout

Discuss the adverse effects of urate lowering therapies.

When should urate lowering therapies be discontinued?

## Educational Intervention Assessment

Question	Answer Options	Control % (n)	Intervention % (n)	p-value
Where is your primary area of practice?	Community	89.3% (25)	92.0% (23)	0.736
	Hospital	10.7% (3)	8.0% (2)	
	True	67.9% (19)	96.0% (24)	
	False	17.9% (5)	4.0% (1)	
	Don't Know	14.3% (4)	0% (0)	
Urate-lowering therapy (ULT) is targeted to serum urate level	True	32.1% (9)	64.0% (16)	0.029
	False	60.7% (17)	36.0% (9)	
	Don't Know	7.1% (2)	0% (0)	
First-line therapy for gout involves a combination of a xanthine oxidase inhibitor (e.g. allopurinol) combined with a prophylactic agent (e.g. colchicine)	True	32.1% (9)	84.0% (21)	0.043
	False	60.7% (17)	12.0% (3)	
	Don't Know	7.1% (2)	4.0% (1)	
	Starting ULT	3.6% (1)	28.0% (7)	
Colchicine at a dose of 0.5mg twice daily should be given in combination with urate lowering therapy (ULT) for at least 6 months after initiation of ULT, as a prophylaxis for gout flares	True	32.1% (9)	84.0% (21)	0.001
	False	60.7% (17)	12.0% (3)	
	Don't Know	7.1% (2)	4.0% (1)	
	Starting ULT	3.6% (1)	28.0% (7)	
	Stopping ULT	14.3% (4)	4.0% (1)	
It is common for gout to flare when...	Increasing ULT	0% (0)	0% (0)	0.222
	All of the Above	42.9% (12)	68.0% (17)	
	None of the above	3.6% (1)	0% (0)	
	True	25.0% (7)	4.0% (1)	
Patients should stop ULT during a gout attack	False	71.4% (20)	96.0% (24)	0.057
	Don't Know	3.6% (1)	0% (0)	
	True	35.7% (10)	84.0% (21)	
	False	60.7% (17)	16.0% (4)	
Patients are advised to take colchicine continuously for six months or longer after initiation of ULT	True	57.1% (16)	72.0% (18)	0.002
	False	39.3% (11)	24.0% (6)	
	Don't Know	3.6% (1)	4.0% (1)	
Patients should dose-reduce rather than stop colchicine if they experience side-effects (e.g. diarrhoea)	Yes	71.4% (20)	72.0% (18)	0.963
	No	28.6% (8)	28.0% (7)	
	Yes	53.6% (15)	56.0% (14)	
	No	46.4% (13)	44.0% (11)	
Which information sources for colchicine do you find helpful?	BNF	17.9% (5)	48.0% (12)	0.487
	SPC	82.1% (23)	52.0% (13)	
	Guidelines such as EULAR or ACR			
	No			

## Key Take Home Messages

- Gout is the most common form of inflammatory arthritis in adults
- Despite advanced understanding of the molecular bases of hyperuricaemia and gout, there are substantial quality gaps in the management of gout.
- Shortfalls in both patient education and treatment adherence are common in gout.
- Pharmacists play a key role in educating the community about medicine management and are a valuable information resource for patients.
- Pharmacist-knowledge of gout management in Ireland was suboptimal and not inline with current EULAR gout management guidelines.
- Gout management recommendations can be impeded if translation into pharmacy practice is neglected
- We demonstrate that low-cost educational interventions can greatly improve pharmacist knowledge of gout management
- Improved pharmacist knowledge can in turn empower patients to assume self-management of gout.