



Editorial

Crystal Clear? The 2022 NICE Guideline for the Diagnosis and Management of Gout

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Gout is the most common inflammatory arthritis and causes significant pain and disability [1]. Whilst effective treatments for gout exist, care is frequently suboptimal. Only a minority of people with gout receive definitive 'curative' urate-lowering therapy, and few have this escalated to achieve the target serum urate level required to achieve monosodium urate crystal dissolution and clinical remission [2].

Clinical practice guidelines are statements that include recommendations intended to optimise patient care, informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options [3]. There have been multiple clinical guidelines for gout published over recent years, which have attempted to provide people with gout and their clinicians with recommendations to optimise the diagnosis and management of gout, for example, those produced by the American College of Rheumatology (ACR) [4], European Alliance of Associations for Rheumatology (EULAR) [5,6], British Society for Rheumatology (BSR) [7], and American College of Physicians (ACP) [8]. Whilst clinical guidelines are developed with the honourable intentions of improving patient care and guiding clinicians, difficulty can be created when they differ in their recommendations as a result of differing methodologies, which multidisciplinary stakeholders are involved in guideline development, and which types of evidence are permitted to be included, for example, which research designs and whether expert consensus recommendations are permitted when robust research evidence does not exist [9]. The highest profile disagreement between guideline recommendations in the field of gout remains the debate caused by the ACP guideline's recommendation of a 'treat-to-avoid-symptoms' approach to urate-lowering therapy (ULT) [8], contrary to other national and international guidelines which advocate a 'treat-to-target' strategy, where the dose of ULT is titrated to achieve a target serum urate level [4,5,7].

In June 2022, the National Institute for Health and Care Excellence (NICE) published a new guideline for the diagnosis and management of gout [10,11]. This guideline was produced following NICE's rigorous and well-established process [12], which incorporates a systematic search and review of the relevant literature, combined with expert opinion, consensus view, and patient perspectives. The multidisciplinary guideline committee included two rheumatologists, two general practitioners, one rheumatology nurse specialist, one pharmacist, one dietician, one orthopaedic surgeon, and two lay representatives, as well as an independent chair and methodological experts from the NICE National Guideline Centre. Other strengths include the prior publication of the guideline scope [13], inviting stakeholder comments on the draft scope and final guideline, and the consideration of both clinical efficacy and cost effectiveness when formulating its recommendations. The guideline covers recommendations for diagnosis and assessment, information and support,



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the management of gout flares, diet and lifestyle, long-term management of gout (including which ULT to start and when, treatment-to-target, anti-inflammatory prophylaxis, and monitoring), and referral to specialist services.

The NICE guideline has a number of key differences in its recommendations for gout management compared with previously published guidelines. First, allopurinol or febuxostat is recommended as an option for first-line ULT in people with gout without a history of major cardiovascular disease. Whilst existing guidelines from EULAR, BSR, and ACR [4,5,7] recommend febuxostat only as a second-line ULT, the NICE guideline includes an update of its 2008 technology appraisal of febuxostat for the management of hyperuricaemia in people with gout [14], reaching the conclusion that there is no significant difference in clinical efficacy or cost effectiveness between allopurinol and febuxostat. Given that febuxostat has fewer dose titration stages than allopurinol, and that the two licensed doses of febuxostat of 80 mg and 120 mg daily are more effective than 300 mg of allopurinol daily [15], this recommendation has the potential to encourage uptake of ULT and improve the proportion of patients achieving a target serum urate level. Second, and importantly, in contrast with the ACP guideline, the NICE guideline concurs with the EULAR, BSR, and ACR guidelines in recommending a 'treat-to-target' approach to ULT, supported by randomised trials demonstrating the clinical efficacy and cost effectiveness of this treatment strategy [16,17]. Third, whereas the 2017 BSR guideline recommended a universal target serum urate level $<300 \mu\text{mol/L}$ (5 mg/dL) [7], the NICE guideline recommends a target serum urate level $<360 \mu\text{mol/L}$ (6 mg/dL) (or $<300 \mu\text{mol/L}$ (5 mg/dL) in those with tophi, chronic gouty arthritis, or ongoing frequent flares), bringing the recommendation for the target serum urate level in the UK in line with the ACR [4] and EULAR [5] guidelines. Furthermore, establishing the optimal target serum urate level is highlighted as a priority for future research. Finally, the NICE guideline includes recommendations for follow-up and disease monitoring, which have not been included in previous guidelines. All patients are recommended to receive a follow-up appointment upon resolution of a gout flare. This provides an opportunity for patient education, to recheck serum urate, advise on lifestyle measures and ULT, and review associated comorbidities. In addition, it is recommended that all patients receive annual monitoring of their serum urate level after they have achieved the target level. These recommendations are intended to optimise patient education, improve ULT uptake, monitoring, and adherence, and ensure the achievement and maintenance of the target serum urate level.

A caveat of the NICE guideline is that recommendations concerning the choice of ULT are limited to xanthine oxidase inhibitors, and that uricosuric drugs are not considered. Sulfapyrazone, probenecid, and benzbromarone are unlicensed in the UK and hence are beyond the remit of a NICE guideline, which cannot include recommendations about unlicensed drugs. Hence, the guideline cannot inform the choice of ULT in people with gout who do not respond to, are intolerant of, or have contra-indications to allopurinol and febuxostat. Guidance for treatment with uricosurics can be found in the ACR, EULAR, and BSR guidelines, however [4,5,7].

In summary, the 2022 NICE guideline for the diagnosis and management of gout was developed using a robust evidence-based methodology and provides clinicians and patients with clarity regarding a number of aspects related to the diagnosis and management of gout. In particular, the guideline contains an important recommendation to follow a 'treat-to-target' strategy for ULT, in contrast to the ACP guideline [8], and in alignment with the ACR, EULAR, and BSR guidelines [4,5,7]. The recommendations to include febuxostat as a first-line ULT provide patients with greater therapeutic access, whilst recommendations for follow-up and disease monitoring provide clinicians with an organised framework to manage the condition in conjunction with patients. Providing healthcare professionals and patients with clear information and guidance about a condition can directly translate into better healthcare outcomes. This NICE guideline therefore provides an important opportunity to improve the awareness, management, and prevention of this common and frequently debilitating disease.

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References

1. Dehlin, M.; Jacobsson, L.; Roddy, E. Global epidemiology of gout: Prevalence, incidence, treatment patterns and risk factors. *Nat. Rev. Rheumatol.* **2020**, *16*, 380–390. [CrossRef] [PubMed]
2. Kuo, C.F.; Grainge, M.J.; Mallen, C.; Zhang, W.; Doherty, M. Rising burden of gout in the UK but continuing suboptimal management: A nationwide population study. *Ann. Rheum. Dis.* **2015**, *74*, 661–667. [CrossRef]
3. Graham, R.; Mancher, M.; Miller Wolman, D.; Greenfield, S.; Steinberg, E. Introduction. In *Clinical Practice Guidelines We Can Trust, Committee on Standards for Developing Trustworthy Clinical Practice Guidelines*; Institute of Medicine, Ed.; National Academies Press: Washington, DC, USA, 2011; pp. 15–19.
4. FitzGerald, J.D.; Dalbeth, N.; Mikuls, T.; Brignardello-Petersen, R.; Guyatt, G.; Abeles, A.M.; Gelber, A.C.; Harrold, L.R.; Khanna, D.; King, C.; et al. American College of Rheumatology Guideline for the Management of Gout. *Arthritis Care Res.* **2020**, *72*, 744–760. [CrossRef] [PubMed]
5. Richette, P.; Doherty, M.; Pascual, E.; Barskova, V.; Becce, F.; Castañeda-Sanabria, J.; Coyfish, M.; Guillo, S.; Jansen, T.L.; Janssens, H.; et al. 2016 updated EULAR evidence-based recommendations for the management of gout. *Ann. Rheum. Dis.* **2017**, *76*, 29–42. [CrossRef]
6. Richette, P.; Doherty, M.; Pascual, E.; Barskova, V.; Becce, F.; Castaneda, J.; Coyfish, M.; Guillo, S.; Jansen, T.; Janssens, H.; et al. 2018 updated European League Against Rheumatism evidence-based recommendations for the diagnosis of gout. *Ann. Rheum. Dis.* **2020**, *79*, 31–38. [CrossRef] [PubMed]
7. Hui, M.; Carr, A.; Cameron, S.; Davenport, G.; Doherty, M.; Forrester, H.; Jenkins, W.; Jordan, K.M.; Mallen, C.D.; McDonald, T.M.; et al. British Society for Rheumatology Standards, Audit and Guidelines Working Group. The British Society for Rheumatology Guideline for the Management of Gout. *Rheumatology* **2017**, *56*, 1056–1059. [CrossRef] [PubMed]
8. Qaseem, A.; Harris, R.P.; Forciea, M.A.; Clinical Guidelines Committee of the American College of Physicians; Denberg, T.D.; Barry, M.J.; Boyd, C.; Chow, R.D.; Humphrey, L.L.; Kansagara, D.; et al. Management of Acute and Recurrent Gout: A Clinical Practice Guideline from the American College of Physicians. *Ann. Intern. Med.* **2017**, *166*, 58–68. [CrossRef] [PubMed]
9. Roddy, E.; Doherty, M. Treatment Guidelines: The Good, the Bad, and the Ugly. In *Gout*; Schlesinger, N., Lipsky, P.E., Eds.; Elsevier: Saint Louis, MO, USA, 2019; pp. 141–153.
10. Neilson, J.; Bonnon, A.; Dickson, A.; Roddy, E. Guideline Committee. Gout: Diagnosis and management—Summary of NICE guidance. *BMJ* **2022**, *378*, 1754. [CrossRef] [PubMed]
11. Gout: Diagnosis and Management. NICE Guideline [NG219]. Available online: <https://www.nice.org.uk/guidance/ng219/chapter/Recommendations#:~:text=Treatment%20for%20gout%20flares&text=1%20Offer%20a%20non%2Dsteroidal,%2C%20co%2Dprescriptions%20and%20preferences> (accessed on 31 October 2022).
12. Garbi, M. National Institute for Health and Care Excellence clinical guidelines development principles and processes. *Heart* **2021**, *107*, 949–953. [CrossRef] [PubMed]
13. National Institute for Health and Care Excellence Guideline Scope Gout: Diagnosis and management. Available online: <https://www.nice.org.uk/guidance/ng219/documents/final-scope-2> (accessed on 26 October 2022).

14. Febuxostat for the Management of Hyperuricaemia in People with Gout Technology Appraisal Guidance [TA164]. Available online: <https://www.nice.org.uk/guidance/ta164> (accessed on 26 October 2022).
15. Becker, M.; Schumacher, H.R., Jr.; Wortmann, R.L.; MacDonald, P.A.; Eustace, D.; Palo, W.A.; Streit, J.; Joseph-Ridge, N. Febuxostat compared with allopurinol in patients with hyperuricaemia and gout. *N. Engl. J. Med.* **2005**, *353*, 2450–2461. [[CrossRef](#)] [[PubMed](#)]
16. Doherty, M.; Jenkins, W.; Richardson, H.; Sarmanova, A.; Abhishek, A.; Ashton, D.; Barclay, C.; Doherty, S.; Duley, L.; Hatton, R.; et al. Efficacy and cost-effectiveness of nurse-led care involving education and engagement of patients and a treat-to-target urate-lowering strategy versus usual care for gout: A randomised controlled trial. *Lancet* **2018**, *392*, 1403–1412. [[CrossRef](#)] [[PubMed](#)]
17. Stamp, L.K.; Chapman, P.T.; Barclay, M.L.; Horne, A.; Frampton, C.; Tan, P.; Drake, J.; Dalbeth, N. A randomised controlled trial of the efficacy and safety of allopurinol dose escalation to achieve target serum urate in people with gout. *Ann. Rheum. Dis.* **2017**, *76*, 1522–1528. [[CrossRef](#)] [[PubMed](#)]

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