

Supplementary material

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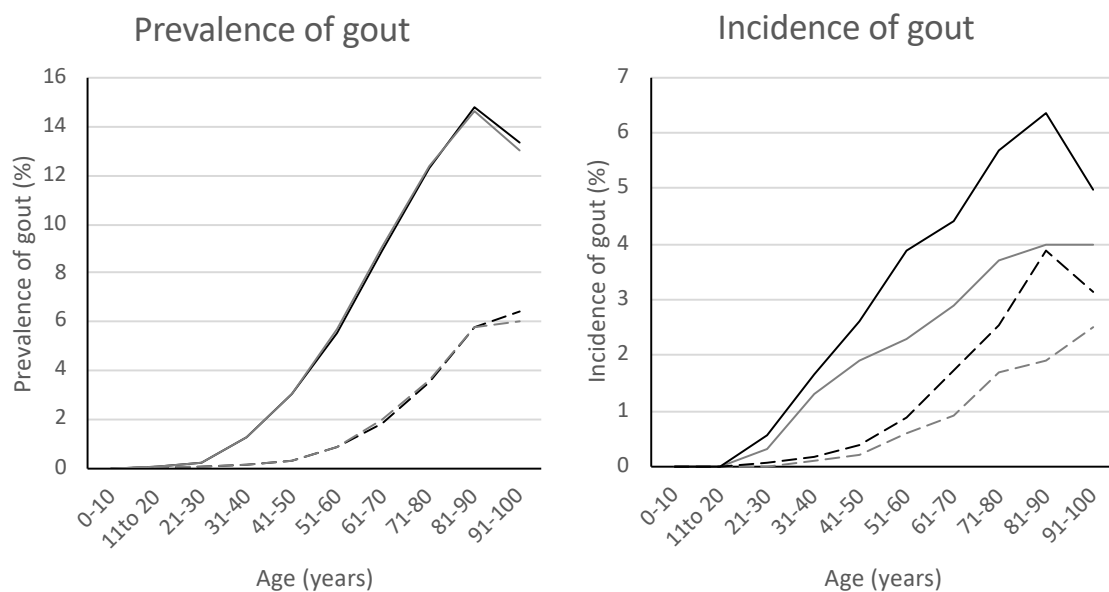
1. Case definition: Gout was defined using published Read code list expanded with additional codes³. Prevalent gout cases had either prior primary-care consultation for gout or had specific Read codes indicating long-term gout only.

Incident gout cases consulted for gout for the first time with at-least one-year prior disease-free registration in the CPRD. The requirement to have one-year disease free registration minimises the risk of classifying prevalent cases as incident³. For ascertaining incident gout cases, separate at-risk cohorts comprising of all individuals registered with up-to-standard practices who had no diagnostic codes for gout before the latest of their current registration date plus 365 days or January 1st of the calendar year were constructed. Follow-up started from the latest of these two dates to the earliest of first gout diagnosis, transfer out of GP surgery, death, December 31st of the year; or, for the year 2021, the study end date.

Definition of urate lowering treatment (ULT) prescription: ULT prescription was defined as a prescription of allopurinol, febuxostat, benzbromarone, probenecid or sulfinpyrazone. Product codes were used to ascertain ULT prescription.

2. Variables for direct standardization: The incidence and prevalence were directly standardised to the entire study population across the study period for age (10-year age-band), sex, and length of registration in CPRD (≤ 1 , $>1-5$, $>5-10$, $>10-15$, $>15-20$, $>20-25$, >25 years). The latter was included because increasing length of registration in CPRD increases incidence and prevalence estimates of gout in CPRD³.

3. *Joinpoint analysis:* Joinpoint analysis was done using the Joinpoint Trend Analysis Software version 4.9.0.0 obtained from <https://surveillance.cancer.gov/joinpoint/> and developed by the National Cancer Institute (NCI) of the National Institute for Health (NIH). It uses Bayesian Information Criterion to generate different numbers of joinpoints indicating points in time where trends in the prevalence and incidence change significantly and to fit separate linear trends in each time segment. Initially a model is fitted without joinpoints (i.e., a straight line fitted to the data) with joinpoints added whenever a change in trend over time is statistically significant. Annual percentage changes (APC) for each segment and average APC (AAPC) for the entire study period are calculated.



4. Figure S1: (A) Crude prevalence of gout 2019 and 2021, stratified by age and sex. (B) Crude incidence of gout 2019 and 2021, stratified by age and sex. Solid black line male 2019, long dash line black female 2019. Grey solid line male 2021, grey long dash line female 2021.

5. Read codes used to ascertain gout status.

Gout				
Medcode	Readcode	Readterm	Incident gout	Prevalent gout
709	C34..00	Gout	1	1
2857	N023.00	Gouty arthritis	1	1
3759	1443.00	H/O: gout		1
4440	C34y200	Gouty tophi of other sites	1	1
9874	C34y500	Gouty tophi of hand	1	1
10080	C340.00	Gouty arthropathy	1	1
11462	C342.00	Idiopathic gout	1	1
12594	N023z00	Gouty arthritis NOS	1	1
14996	6691.00	Initial gout assessment	1	1
16475	669..00	Gout monitoring		1
17284	2D52.00	O/E - auricle of ear - tophi	1	1
21687	C345.00	Gout due to impairment of renal function	1	1
24153	C34z.00	Gout NOS	1	1
27521	C34yz00	Other specified gouty manifestation NOS	1	1
28999	C34y.00	Other specified gouty manifestation	1	1
29658	6693.00	Joints gout affected		1
34006	6695.00	Date gout treatment started		1
34105	6699.00	Gout treatment changed		1
35660	6692.00	Follow-up gout assessment		1
35664	N023700	Gouty arthritis of the ankle and foot	1	1
36481	C34y000	Gouty tophi of ear	1	1
43646	669A.00	Date gout treatment stopped		1
44566	C344.00	Drug-induced gout	1	1
45465	N023300	Gouty arthritis of the forearm	1	1
49775	N023600	Gouty arthritis of the lower leg	1	1
50067	C34y300	Gouty iritis	1	1
52101	N023400	Gouty arthritis of the hand	1	1
52103	6698.00	Gout drug side effects		1
52117	669Z.00	Gout monitoring NOS		1
52969	C341.00	Gouty nephropathy	1	1
57334	G557300	Gouty tophi of heart	1	1
58064	N023x00	Gouty arthritis of multiple sites	1	1
58746	6697.00	Gout associated problems		1
59344	C34y400	Gouty neuritis	1	1
60541	N023y00	Gouty arthritis of other specified site	1	1
61145	C341z00	Gouty nephropathy NOS	1	1
68209	6696.00	Date of last gout attack		1
72471	N023100	Gouty arthritis of the shoulder region	1	1
93677	N023800	Gouty arthritis of toe	1	1
93689	C34y100	Gouty tophi of heart	1	1
94539	Nyu1700	[X]Other secondary gout	1	1
97539	N023200	Gouty arthritis of the upper arm	1	1
108901	C346.00	Acute exacerbation of gout	1	1
111834	C343.00	Lead-induced gout	1	1
113314	N023000	Gouty arthritis of unspecified site	1	1
114211	C341000	Gout nephropathy unspecified	1	1

6. Product codes to ascertain urate lowering treatment prescription

Product code	Drug substance name	Product code	Drug substance name
11975	Allopurinol	42859	Febuxostat
34005	Allopurinol	43336	Febuxostat
41612	Allopurinol	42536	Febuxostat
23368	Allopurinol	43161	Febuxostat
46941	Allopurinol	77342	Benzbromarone
44239	Allopurinol	47263	Benzbromarone
368	Allopurinol	31662	Probenecid
19037	Allopurinol	68886	Probenecid
78470	Allopurinol	8944	Probenecid
64906	Allopurinol	1302	Probenecid
41520	Allopurinol	5204	Sulfinpyrazone
34566	Allopurinol	20133	Sulfinpyrazone
67256	Allopurinol	18519	Sulfinpyrazone
72223	Allopurinol	9951	Sulfinpyrazone
34711	Allopurinol	13419	Sulfinpyrazone
44240	Allopurinol	10554	Sulfinpyrazone
24215	Allopurinol		
67748	Allopurinol		
34930	Allopurinol		
30768	Allopurinol		
19201	Allopurinol		
33484	Allopurinol		
34947	Allopurinol		
71008	Allopurinol		
74645	Allopurinol		
41541	Allopurinol		
76	Allopurinol		
34278	Allopurinol		
77467	Allopurinol		
34573	Allopurinol		
68025	Allopurinol		
13467	Allopurinol		
76324	Allopurinol		
7805	Allopurinol		
413	Allopurinol		
41664	Allopurinol		
71717	Allopurinol		
78521	Allopurinol		
5182	Allopurinol		
17255	Allopurinol		
76616	Allopurinol		
72153	Allopurinol		
45352	Allopurinol		
83504	Allopurinol		