

Cohort study investigating the natural history of gout in UK general practice

Dr Samuel Finnikin¹, Prof Edward Roddy², Prof Christian Mallen² 1. University of Birmingham 2. Keele University

Background and objectives

Gout is the most common inflammatory arthritis, affecting 2.5% of the UK population (1), and it is almost exclusively managed in primary care. The management of gout is based around treatment of flares with anti-inflammatory medications and the prevention of flares using urate lowering therapies. However, urate lowering therapies are often not initiated and treatment targets are frequently not achieved (1).

One of the potential barriers to use of ULT is the lack of evidence around, and consensus on, who should be offered this treatment and at what point in the disease course (2). One of the factors contributing to this is a poor understanding of the natural history of gout and its progression (3).

The purpose of this study was to improve understanding about the frequency of gout flares in the UK. A secondary aim was to characterise the clinical and non-clinical factors associated with the prescribing of ULT for patients with gout.

51,784 patients

3.8 years median follow-up

73.1% male

55.6% had ≥1 comorbidity

Relevant co-morbidities: CVD, Heart Failure, HTN, T1DM, T2DM, CKD

35.4% experienced a flare

Median time to flare 384 days

27.7% had ULT initiated

(16.4% of those who had no flare, 48.3% of those experiencing flare)

Methods

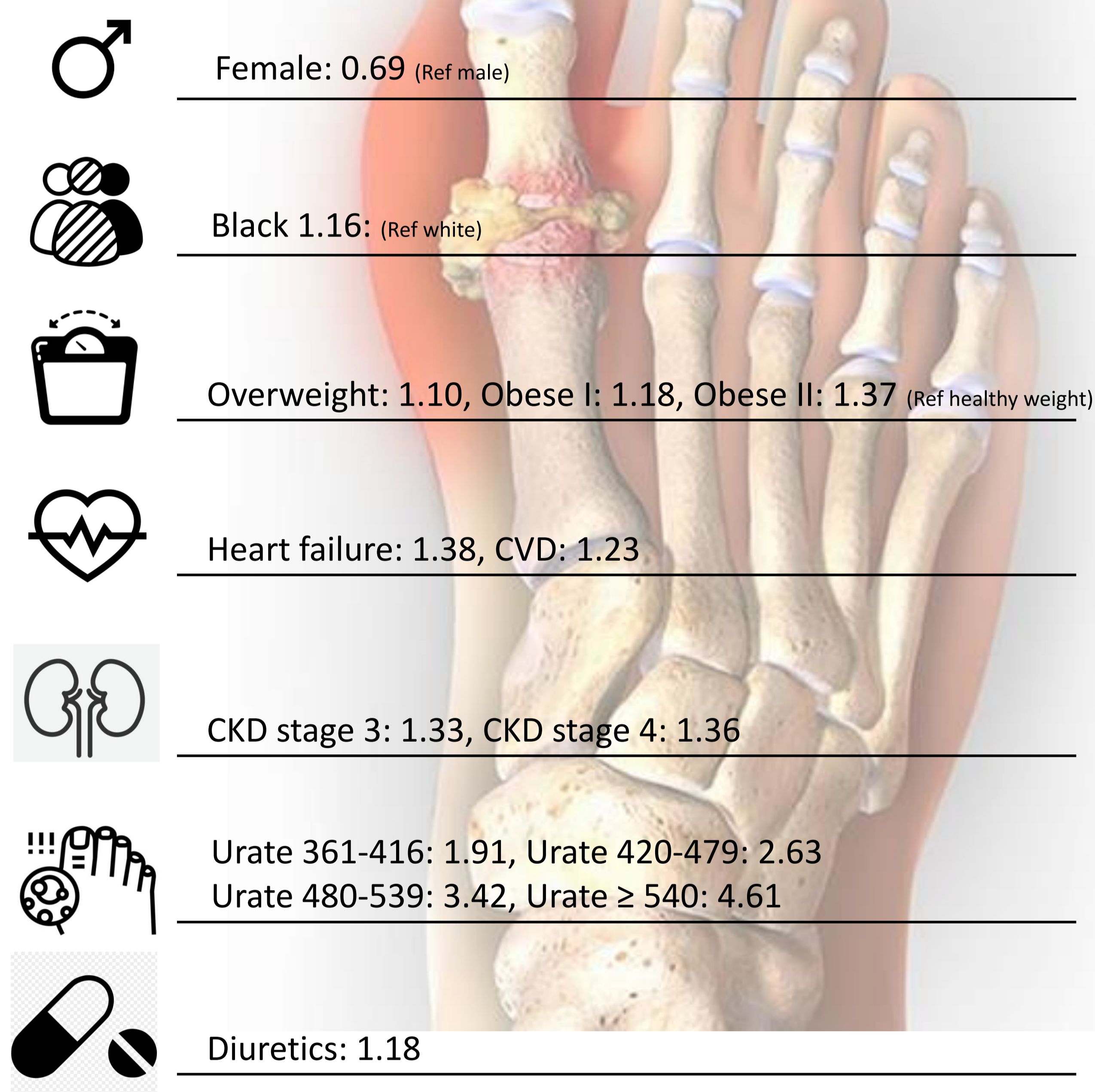
This retrospective cohort study comprised patients with incident gout in the Clinical Practice Research Datalink GOLD database. Patients aged 20+ years were included if they had a new, coded diagnosis of gout between 1.1.2010 and 31.12.2019 and had at least 1 year 30 days of follow up. Patients previously prescribed ULT were excluded.

Gout flares were identified by either: a prescription of colchicine, or an entry of a gout code associated with the prescribing of colchicine, NSAIDs or prednisolone or a joint injections/aspiration. Ascertainment of flares was performed recursively with a 30 day grace period between flares. ULT initiation was identified but resulted on censoring. Patient demographics (age, sex, ethnicity, IMD, alcohol consumption and BMI), relevant co-morbidities (CVD, heart failure, hypertension, Type I and Type 2 diabetes and CKD stage) and co-prescribing (aspirin and diuretics) at baseline were extracted as variables.

A time to event analysis considering multiple events was performed using the Anderson-Gill Cox model and further logistic regression analysis examined ULT prescribing.

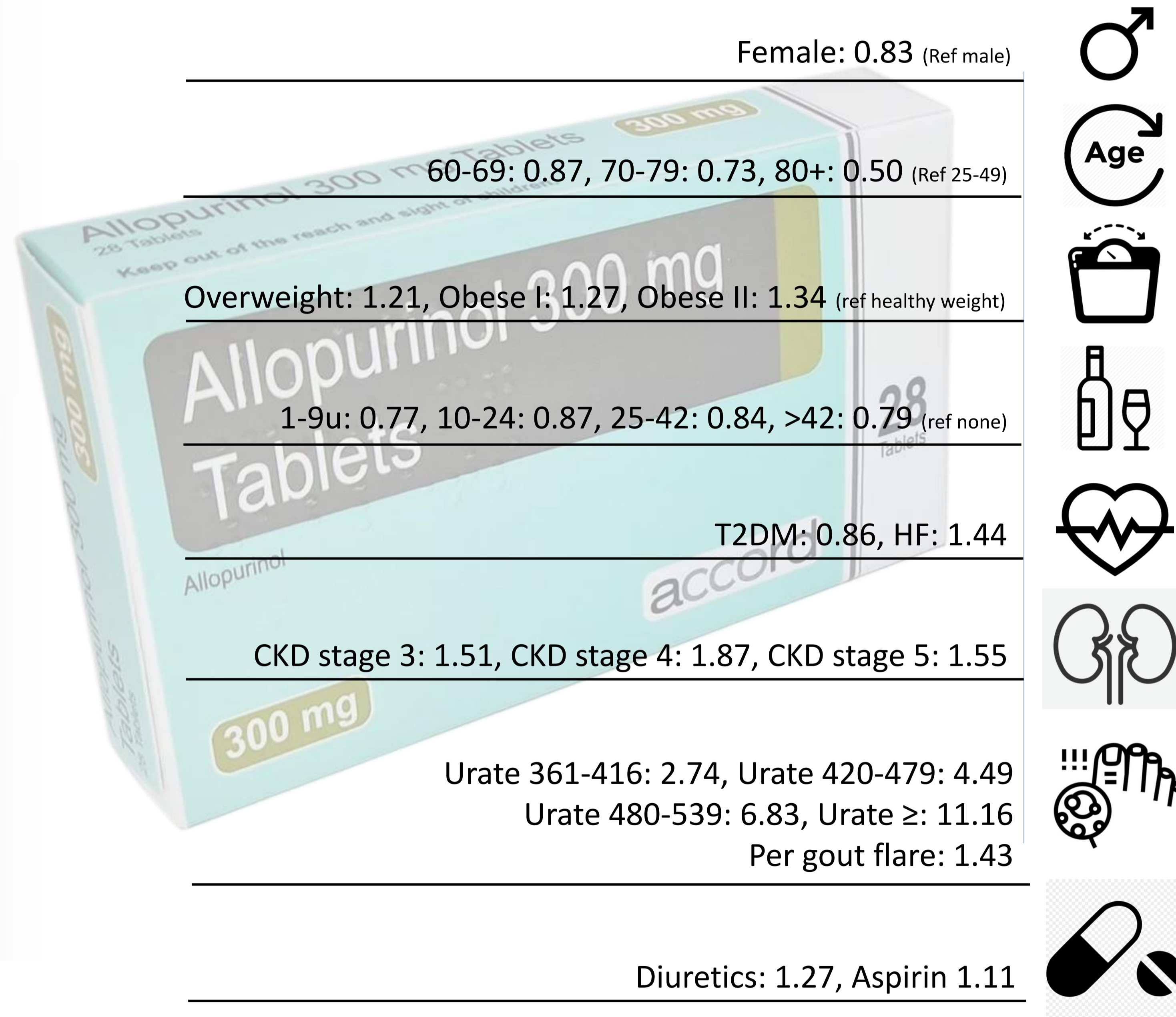
Factors associated with gout flares (HR)

Cox proportional-hazards model with Aderson-Gill method for recurrent events



Factors associated with ULT initiation (OR)

Logistic regression adjusted for clustering by practice



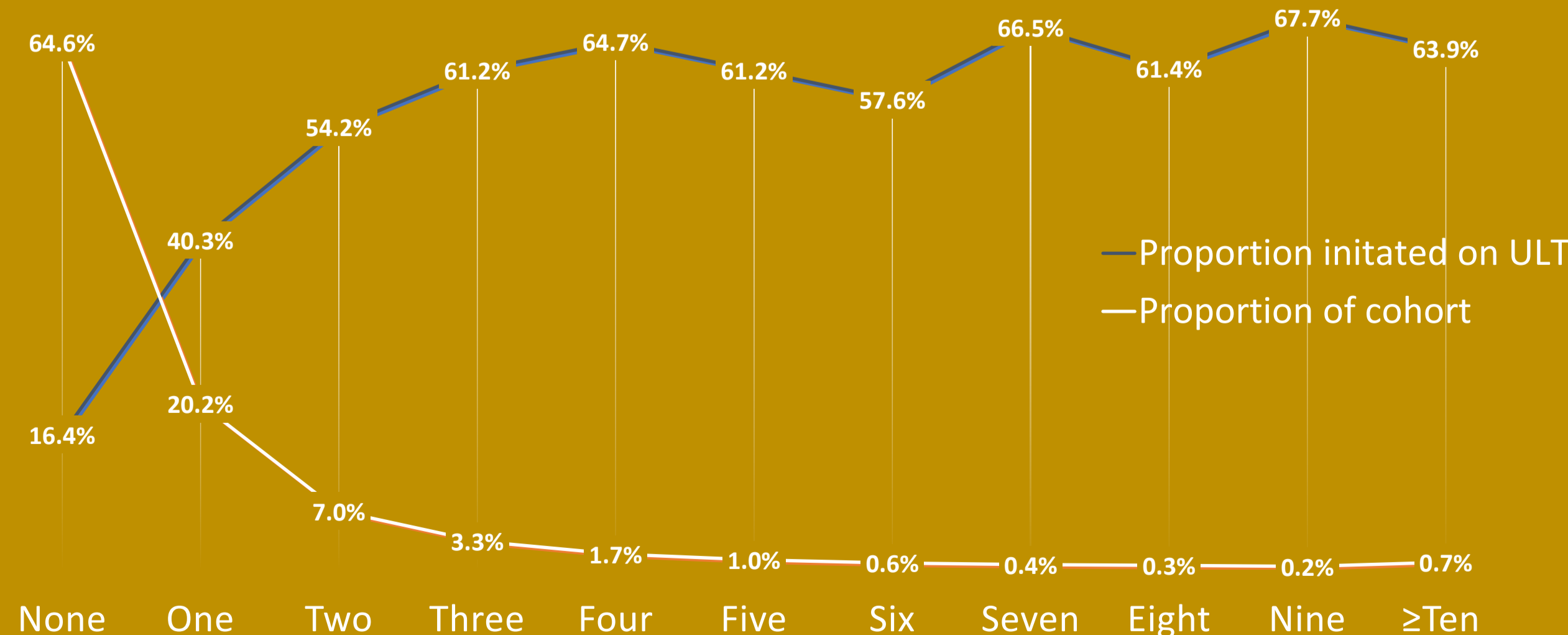
Discussion

Just over a third of patients diagnosed with gout experience a subsequent flare within 3.8 years of follow up, a very similar result to has previously been reported (4).

Less than half of people who experienced a flare were commenced on ULT and even with multiple flares, around a third of people were not started on preventative medication.

Higher baseline urate levels contributed most to the chances of experiencing flares and also contributed most to the odds of being prescribed ULT. In contrast to previous findings, alcohol consumption did not seem to influence the chances of a flare, but interestingly, all levels of alcohol consumption reduced the chances of being initiated on ULT compared to those who were recorded as drinking no alcohol. An increased BMI was associated with both flare likelihood and ULT initiation.

NUMBER OF FLARES EXPERIENCED AND ULT INITIATION LEVELS BY NUMBER OF FLARES



Implications

There is a considerable proportion of people who have gout flares who are not started on ULT. It may be that they are offered medication but decline, but it may also be that they are not offered treatment. People with raised serum urate are most likely to experience a flare and thus most likely to benefit from ULT. This is reflected in prescribing behaviour.

Pervious evidence has suggested that increased alcohol consumption increases the chance of a flare. Whilst our data did not find this, the opposite association with ULT initiation is observed. Prescribers may be influenced by alcohol being a modifiable risk factor, but perhaps alcohol consumption shouldn't influence the decision to prescribe at all.

An improved understanding of the factors associated with gout flares should help inform discussions about the benefits of ULT initiation and optimise management

