Infection risk associated with oral glucocorticoid dose in people with polymyalgia rheumatica and giant cell arteritis in England

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ABSTRACT

Background
Infection is a -recognised complication of long-term glucocorticoid treatment. Accurate dose-response estimates of risk have yet to be quantified, particularly in primary care populations and in people with polymyalgia rheumatica and/or giant cell arteritis (PMR/GCA).

Methods
Cohort analysis of primary care records from patients with PMR/GCA treated during 1998-2017 in the UK Clinical Practice Research, linked to hospital admissions and the death registry. Glucocorticoid dose risks and ratios of incident all-cause, bacterial, viral, parasitic and fungal infection were estimated with Kaplan-Meier methods and multilevel multivariable Cox proportional hazard models.

Results
Overall, 39,938 people with PMR/GCA were followed for a median of 4.8 years. Mean patient age was 73 years and 30.9% were men. Fifty-seven percent of patients had at least one infection, with 26.7% requiring hospitalisation and 7.3% dying within 7 days of diagnosis. Cumulative risks of all-cause infection were 18.3% and 54.7% and 76.9% at 1 and 5 years, respectively. Lower respiratory tract infections, conjunctivitis and herpes zoster were the most commonly diagnosed infections. For all-cause infection, the increases in hazard ratios (HR) were 1.13 (95%CI 1.12 to 1.14) and 1.50 (1.49 to 1.52) for every increase of daily 5 mg prednisolone-equivalent dose (PED) and of 1,000 mg of cumulative PED in last year respectively. Dose response estimates were similar regardless of sex, type of underlying chronic disease and its duration. The risk of bacterial infections was higher in patients of older age.

Conclusions
The observed excess risk of infection associated with oral glucocorticoid treatment in patients with PMR/GCA was noticeable even for daily doses of <5mg.