Mortality outcomes associated with oral corticosteroid use in patients with COPD

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Background: Oral corticosteroids (OCS) are sometimes used to manage exacerbations of chronic obstructive pulmonary disease (COPD). However, their use has been associated with adverse outcomes such as mortality.

Aim: To measure possible associations between COPD-related OCS use or cumulative OCS exposure and all-cause mortality (ACM) in patients with COPD.

Methods: This historical, observational cohort study used the UK Clinical Practice Research Datalink (1987−2019) linked to mortality data to compare patients who ever (OCS group) or never (non-OCS group) used OCS. Patients with a COPD diagnosis on/after 1 April 2003 were identified. Direct matching was performed between the OCS group (index date: first COPD-related OCS prescription) and non-OCS group (index date: nearest primary care visit to a matched OCS patient). Cox regressions examined associations between OCS use or time-varying cumulative OCS exposure and ACM, adjusted for confounders that included baseline exacerbation number.

Results: Of 323,722 patients with COPD identified, 106,775 received COPD-related OCS (median follow-up, 7.8 years); 53,299 pairs were able to be matched (mean ± SD age, 64.6±12.5 years; 59.8% male). Compared with the non-OCS group, the OCS group had higher ACM risk (adjusted hazard ratio [HR] [95% CI]: 1.03 [1.00, 1.06]). Relative to cumulative OCS exposure <0.5g, cumulative exposure ≥0.5g was associated with higher ACM risk (adjusted HR [95% CI]: 0.5−<1.0g, 1.74 [1.65, 1.83]; 1.0−<2.5g, 2.45 [2.33, 2.58]; 2.5−<5.0g, 3.26 [3.08, 3.45]; 5.0−<10.0g, 4.01 [3.77, 4.27]; ≥10.0g, 5.75 [5.39, 6.13]).

Conclusion: OCS use was associated with a higher risk of all-cause mortality, which increased with higher cumulative OCS exposure.