Association between oral corticosteroid bursts and severe adverse events: a nationwide population-based cohort study


SUMMARY:

- Long term steroid treatment can cause a litany of complications including infection, GI bleeding/ulcers, Cushing syndrome, and osteoporosis.
- In the ED, the indications for short-term steroid use appear to be expanding from severe conditions such as asthma to less severe symptoms such as sore throat and arthritis. But do these “bursts” of use carry the same risks as long-term use?
- The authors of this study conducted a nationwide population study in Taiwan to quantify the effects of steroid bursts on GI bleeding, sepsis, and heart failure via a self-controlled case-series design in which the patients served as their own controls.
- The authors compared risks during a reference period (5-90 days before initiation of a steroid burst) vs 2 posttreatment periods (5-30 and 31-90 days after initiation) among participants 20-64 years of age with a prescription for a single steroid burst, who did not have a history of any of the 3 adverse events of interest.
- A burst was defined as a prescription for steroids for ≤14 days.
- Of 15,859,129 people 20-64 years of age, 25% (4,015,384) received at least 1 steroid burst during the 3-year study period; the median dose was 10 mg for 3 days.
- On the basis of the selection criteria, the authors included 2,623,327 participants with a prescription for a single steroid burst, almost all for skin issues (dermatitis/urticaria) or upper respiratory infections.
- The incidence rates per 1,000 person-years among participants prescribed vs not prescribed steroid bursts were 27.1 vs 16.8 for GI bleeding, 1.5 vs 1.4 for sepsis, and 1.3 vs 0.4 for heart failure.
- The authors observed that the incidence-rate ratios for GI bleeding, sepsis, and heart failure across the 2 periods after steroid treatment were significantly higher than those in the reference period. The risks were highest in the first 30 days, with incidence-rate ratios of 1.80 for GI bleeding, 1.99 for sepsis, and 2.37 for heart failure.
- The results were maintained across several subgroup and sensitivity analyses (ie, the risk elevations were similar in patients with or without comorbid conditions).

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EDITOR’S COMMENTARY: In this population study from Taiwan, the authors show that the rates of GI bleeding, sepsis, and heart failure all increased primarily in the first month after a very brief steroid burst, even in healthy adults. The idea that giving a short steroid burst to a healthy patient is innocuous is going by the wayside, so reserve steroids for cases in which there is strong evidence for meaningful benefit, and avoid them in cases in which the benefit is less clear.