

Even a Few Days of Steroids May Be Risky, New Study Suggests

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Extended use of corticosteroids for chronic inflammatory conditions puts patients at risk for serious adverse events (AEs), including cardiovascular disease, [osteoporosis](#), [cataracts](#), and diabetes. Now, a growing body of evidence suggests that even short bursts of these drugs are associated with serious risks.

Most recently, a population-based study of more than 2.6 million people found that taking corticosteroids for 14 days or less was associated with a substantially greater risk for gastrointestinal (GI) bleeding, [sepsis](#), and [heart failure](#), particularly within the first 30 days after therapy.

In the study, Tsung-Chieh Yao, MD, PhD, a professor in the Division of Allergy, [Asthma](#), and Rheumatology in the Department of Pediatrics at Chang Gung Memorial Hospital in Taoyuan, Taiwan, and colleagues used a self-controlled case series to analyze data from Taiwan's National Health Insurance Research Database of medical claims. They compared patients' conditions in the period from 5 to 90 days before treatment to conditions from the periods from 5 to 30 days and from 31 to 90 days after therapy.

With a median duration of 3 days of treatment, the incidence rate ratios (IRRs) were 1.80 (95% CI, 1.75 – 1.84) for GI bleeding, 1.99 (95% CI, 1.70 – 2.32) for sepsis, and 2.37 (95% CI, 2.13 – 2.63) for heart failure.

Given the findings, physicians should weigh the benefits against the risks of rare but potentially serious consequences of these anti-inflammatory drugs, according to the authors.

"After initiating patients on oral steroid bursts, physicians should be on the lookout for these severe adverse events, particularly within the first month after initiation of steroid therapy," Yao told *Medscape Medical News*.

The findings were [published online](#) July 6 in *Annals of Internal Medicine*.

Of the 15,859,129 adult Asians in the Taiwanese database, the study included 2,623,327 adults aged 20 to 64 years who received single steroid bursts (14 days or less) between January 1, 2013, and December 31, 2015.

Almost 60% of the indications were for skin disorders, such as eczema and [urticaria](#), and for respiratory tract infections, such as sinusitis and [acute pharyngitis](#). Among specialties, dermatology, otolaryngology, family practice, internal medicine, and pediatrics accounted for 88% of prescriptions.

"Our findings are important for physicians and guideline developers because short-term use of oral corticosteroids is common and the real-world safety of this approach remains unclear," the authors write. They acknowledge that the database did not provide information on such potential confounders as disease severity and lifestyle factors, nor did it include children and vulnerable individuals, which may limit the generalizability of the results.

The findings echo those of a 2017 [cohort study](#) conducted by researchers at the University of Michigan in Ann Arbor. That study, by Akbar K. Waljee, MD, an assistant professor of gastroenterology, and colleagues, included data on more than 1.5 million privately insured US adults. The researchers included somewhat longer steroid bursts of up to 30 days' duration and found that use of the drugs was associated with a greater than fivefold increased risk for sepsis, a more than threefold increased risk for venous [thromboembolism](#), and a nearly twofold increased risk for fracture within 30 days of starting treatment.

Furthermore, the elevated risk persisted at prednisone-equivalent doses of less than 20 mg/d (IRR, 4.02 for sepsis, 3.61 for venous thromboembolism, and 1.83 for fracture; all $P < .001$).

The US study also found that during the 3-year period from 2012 to 2014, more than 20% of patients were prescribed short-term oral corticosteroids.

"Both studies indicate that these short-term regimens are more common in the real world than was previously thought and are not risk free," Yao said.

Recognition that corticosteroids are associated with adverse events has been building for decades, according to the authors of an [editorial](#) that accompanies the new study.

"However, we commonly use short corticosteroid 'bursts' for minor ailments despite a lack of evidence for meaningful benefit. We are now learning that bursts as short as 3 days may increase risk for serious AEs, even in young and healthy people," write

editorialists Beth I. Wallace, MD, from the Center for Clinical Management Research at the VA Ann Arbor Healthcare System and the Institute for Healthcare Policy and Innovation at Michigan Medicine in Ann Arbor, and Waljee, who led the 2017 study.

Wallace and Waljee draw parallels between corticosteroid bursts and other short-term regimens, such as of antibiotics and opiates, in which prescriber preference and sometimes patient pressure play a role. "All of these treatments have well-defined indications but can cause net harm when used. We can thus conceive of a corticosteroid stewardship model of targeted interventions that aims to reduce inappropriate prescribing," they write.

In comments to *Medscape Medical News*, editorialist Wallace, a rheumatologist who prescribes oral steroids fairly frequently, noted that the Taiwan study is the first to investigate steroid bursts. "Up till now, these very short courses have flown under the radar. Clinicians very commonly prescribe short courses to help relieve symptoms of self-limited conditions like [bronchitis](#), and we assume that because the exposure duration is short, the risks are low, especially for patients who are otherwise healthy."

She warned that the data in the current study indicate that these short bursts — even at the lower end of the 1- to 2-week courses American physicians prescribe most often — carry small but real increases in risk for serious AEs. "And these increases were seen in young, healthy people, not just in people with preexisting conditions," she said. "So, we might need to start thinking harder about how we are prescribing even these very short courses of steroids and try to use steroids only when their meaningful benefits really outweigh the risk."

She noted that a patient with a chronic inflammatory condition such as [rheumatoid arthritis](#) may benefit substantially from short-term steroids to treat a disease flare. "In that specific case, the benefits of short-term steroids may outweigh the risks," Wallace said.

But not everyone thinks a new strategy is needed. For Whitney A. High, MD, associate professor of dermatology and pathology at the University of Colorado in Denver, the overprescribing of short-term corticosteroids is not a problem, and dermatologists are already exercising caution.

"I only prescribe these drugs short term to, at a guess, about 1 in 40 patients and only when a patient is miserable and quality of life is being seriously affected," he said. "And that's something that can't be measured in a database study like the one from Taiwan but only in a risk-benefit analysis," he told *Medscape Medical News*.

Furthermore, dermatologists have other drugs and technologies in their armamentarium, including topical steroids with occlusion or with wet wraps, phototherapy, phosphodiesterase inhibitors, [calcipotriene](#), [methotrexate](#) and other immunosuppressive agents, and biologics. "In fact, many of these agents are specifically referred to as steroid-sparing," High said.

Nor does he experience much pressure from patients to prescribe these drugs. "While occasionally I may encounter a patient who places pressure on me for oral steroids, it's probably not nearly as frequently as providers in other fields are pressured to prescribe antibiotics or narcotics," he said.

According to the Taiwanese researchers, the next step is to conduct more studies, including clinical trials, to determine optimal use of corticosteroids by monitoring adverse events. In the meantime, for practitioners like Wallace and High, there is ample evidence from several recent studies of the harms of short-term corticosteroids, whereas the benefits for patients with self-limiting conditions remain uncertain. "This and other studies like it quite appropriately remind providers to avoid oral steroids when they're not necessary and to seek alternatives where possible," High said.

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