

CPSP looks to shed light on hard-to-diagnose condition

Glucocorticoids (GCs) are essential for treating a number of paediatric conditions, including asthma. However, they can also cause serious side effects. Among them is an enigmatic condition called adrenal suppression (AS).

With the growing number of children who rely on steroidal therapy, there is a need for better understanding of AS. The new study under the Canadian Paediatric Surveillance Program will seek to provide a clearer picture of this condition.

One of the confounding factors of AS is that children may begin to display signs seemingly out of nowhere.

“Patients may be only mildly symptomatic or asymptomatic right before suffering an adrenal crisis,” says Dr. Ellen Goldbloom, one of the study’s principal investigators and a fellow in the division of endocrinology and metabolism at the Children’s Hospital of Eastern Ontario (CHEO).

She and co-principal investigator Alexandra Ahmet, a paediatric endocrinologist at CHEO and the University of Ottawa, want to estimate the incidence, clinical features, and burden of illness of symptomatic AS. Ultimately, results will be used to develop screening guidelines for paediatricians, so that they can better understand how to detect possible AS cases.

Adrenal crisis ‘tip of the iceberg’

Dr. Goldbloom explains that children who have AS but do not present in crisis are hard to identify. Their symptoms might include having weakness and fatigue or “generally not feeling well.” Because children often do not complain about these symptoms, AS can be more difficult to detect. However, once a case has been uncovered and treated, parents report that they notice a marked difference.

“People will often attribute AS signs to something less serious”, Dr. Goldbloom continues. “But once there’s an adrenal crisis, the diagnosis becomes clear.”

“Those who present with adrenal crisis are just the ‘tip of the iceberg,’” she adds. Many more children have undiagnosed biochemical AS with or without symptoms. These children could be at serious risk. “Because if they *do* develop a serious illness, that would be the stress that could push them over.”

Although most reported cases of paediatric AS are in the setting of inhaled steroids, this research will broaden the range of children to include those who use GCs in ways other than by inhaling. The team hopes that this will help them capture more cases.

Adrenal suppression: Possible signs

Symptomatic AS can present as either adrenal crisis or symptomatic adrenal insufficiency.

Adrenal crisis

In this case, AS appears as an acute critical illness — or “adrenal crisis” — that is out of proportion in severity to the current illness and manifests in any of the following:

- hypotension/shock
- decreased consciousness/lethargy
- unexplained disturbance of sugars or salts in the blood
- seizure
- death

Symptomatic

Symptomatic AS presents as a biochemical adrenal insufficiency. Signs and symptoms can include:

- weakness, fatigue, lethargy
- anorexia or gastrointestinal symptoms (nausea, vomiting, constipation, diarrhea, abdominal pain)
- fever
- morning headache
- low blood sugar
- joint or muscle pain
- growth failure
- psychiatric symptoms

Whatever the outcome of the study, it is important to note that “While AS is not always a preventable complication, it is easily treated and managed as long as it is recognized,” said Dr. Goldbloom.

“Many kids need steroids, and we don’t want that to stop.”

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