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Codeine can be fatal for kids: report

Painkiller often used after surgery

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ANDY WONG / THE ASSOCIATED PRESS ARCHIVES

Codeine is not safe for young children, according to a team of researchers.

The common practice of giving children codeine for pain after tonsil surgery may provoke a fatal reaction in some toddlers, Canadian researchers are reporting.

The warning comes after the team reviewed a coroner's case involving an otherwise healthy two-year-old who had surgery to remove his tonsils and adenoids -- small clumps of tissue that lie behind the nose and above the back of the throat -- to treat sleep apnea, a sleep-disordered breathing problem.

Surgery was uneventful, and the boy was sent home with a prescribed dose of codeine and acetaminophen syrup for pain.

Two days later, he died.

Researchers from the University of Western Ontario in London and the Hospital for Sick Children in Toronto discovered the toddler was an ultrarapid metabolizer of codeine. When codeine enters the body and breaks down, or metabolizes, it changes to morphine, which can slow breathing. Tests revealed the boy had a genetic variation that caused his body to convert codeine to morphine more rapidly than most other children.

On the second night after surgery, he developed fever and wheezing. At 9 a.m. the next morning, he had no vital signs, and couldn't be resuscitated.

An autopsy revealed toxic levels of morphine, even though the child's mother had given him the prescribed dose of codeine, based on how much drug remained in the bottle.

"The mom clearly did exactly as she was told," says the study's senior author, Dr. Gideon Koren, a professor at the University of Toronto and Ivey chair in molecular toxicology at the University of Western Ontario.

The toxic accumulation of morphine "may have contributed to respiratory depression and death," Koren's team reports in correspondence published in this week's issue of the *New England Journal of Medicine*.

Many children get codeine after surgery, but rapid metabolizers are at much higher risk of the respiratory depressant effects of morphine, Koren says, "because it's as if they took double or triple the dose." He says an estimated one per cent of European Caucasians are rapid metabolizers of codeine. "But, it goes up to 30 per cent if you are an African-Canadian coming from Ethiopia, for example, and it can be five to 10 per cent if your parents comes from the Mediterranean area.

"It's shocking to think that an otherwise healthy toddler who needed an adenotonsillectomy died as result of the prescribed painkiller," Koren says. "A drug which was perceived as safe for many years is not safe for every child -- and especially vulnerable are kids with sleep apnea that may not reverse."

Writing in the *New England Journal of Medicine*, his team says that codeine "cannot be considered a safe outpatient analgesic for young children after adenotonsillectomy."

As well, Koren says no child operated on for sleep apnea should be sent home from hospital "before someone sees that the sleep apnea has reversed." The Hospital for Sick Children does not release children home the first night. "They want to see if the apnea disappears."

Last year, Koren's team was the first to report the case of a healthy, breastfed baby who died from a morphine overdose. The baby's mother had been taking codeine for pain related to childbirth. Lab tests revealed she was an ultrarapid metabolizer of codeine, which led to high levels of morphine in her baby's blood, even though she was taking less than the recommended amount of codeine.

-- Canwest News Service