

# Factors other than antibiotics may raise risk of C. difficile infection: study

Sheryl Ubelacker, Health Reporter, THE CANADIAN PRESS

THE CANADIAN PRESS 

TORONTO - Infection with potentially deadly Clostridium difficile is often linked to antibiotic use, but new research suggests the drugs may be getting too much of the bad rap for the illness and that other factors may also be to blame.

In a study of C. difficile infections among people living in the community - as opposed to those sickened by the bug while in hospital - McGill University researchers found that a significant proportion of those who got C. diff-related disease had not recently taken antibiotics.

Researchers analyzed health records for 836 Quebecers aged 65 or older living in the community who contracted C. difficile-related disease that landed them in the hospital with severe diarrhea and other symptoms.

They found that 53 per cent had not taken antibiotics in the 45 days preceding hospitalization for their infection. Expanding the analysis further, the study showed 46 per cent of subjects had not been exposed to the drugs for 90 days prior to being admitted.

C. difficile is mainly known as a hospital-acquired infection, but the study participants had not been in hospital for at least three months before being admitted after being sickened by the infection, suggesting their disease was community-acquired.

"We didn't study this because we wanted to say it's a big problem in the community," said principal author Dr. Sandra Dial, a critical-care specialist at McGill. "We don't think it's a big problem in the community."

"Essentially, what we were trying to address is the idea that only patients who have taken antibiotics get C. diff," Dial said from Montreal. "And so what we wanted to examine was could we confirm that people get Clostridium difficile without antibiotic exposure."

She said the main reason researchers looked at community-acquired C. difficile is because they thought "it could make the picture a little clearer than looking at it in a hospital where so many things are closely tied together."

Dial said C. difficile occurs most often among patients already in hospital because transmission is easier: patients are in close proximity, they are already ill and are often given antibiotics.

In the community, cases are proportionately fewer and the circumstances needed for transmission are less prevalent, she said, so other factors must come into play.

Those include people with underlying bowel disease, weakened immune systems and disruptions to "good" intestinal flora that normally would keep C. difficile from reproducing in large enough numbers that they produce a toxin and cause disease.

"And the other thing that keeps coming up again and again is older age," Dial said. "So something must be happening to your immune defences against this bacteria as you get older."

Dial also believes use of antacids known as proton pump inhibitors may encourage serious infection because they strip away one of the body's defences against the bug by limiting stomach acid production.

The recognition of other risk factors should act as a red flag for hospitals, she Dial, whose paper was published in this week's Canadian Medical Association Journal.

"So what we're saying is if patients, particularly elderly patients, who have any sort of bowel disorder present with severe diarrhea, still test them for *C. diff* even if you don't get a history that they've been in a hospital or that they've taken antibiotics in the recent past."

Dr. Andrew Simor, an infectious disease specialist at Sunnybrook Health Sciences Centre in Toronto, said doctors have long known that not all cases of *C. difficile* occur after taking antibiotics. The bacteria was identified as the cause of a particular illness in the 1880s, long before antibiotics were discovered, he said.

"What's interesting in this paper, however, is the relatively big proportion" of patients who had not taken antibiotics, he said. "Almost half of her study population did not appear to have had prior antibiotic exposure."

While the study acknowledges that antibiotic use is still the most important risk factor for *C. difficile*-related disease, "clearly there may be other factors," he said.

Simor agreed that hospitals should be vigilant in testing for the disease when telltale symptoms are present, even in the absence of recent antibiotic use and hospitalization.

"If they're sick enough to come into hospital with diarrhea, yes, *C. difficile* should be tested (for), whether there is a history of antibiotic use or not."

In a related commentary, Dr. Ed Kuijper and Prof. Jaap van Dissel of Leiden University in the Netherlands write that while the lack of antibiotic exposure in people admitted to hospital with *C. difficile* is interesting, it needs to be determined whether *C. difficile* is occurring in younger people without risk factors.

Several studies suggest this may be the case. The authors state "there is an urgent need to identify and better characterize potential risk factors for community-acquired *C. difficile* infection to explain the large proportion of cases not linked to recent antibiotic therapy or hospital stays."