

Diarrhea and candidiasis associated with common antibiotic amoxicillin

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Diarrhea and candidiasis can result from taking the common antibiotic treatments, amoxicillin and amoxicillin-clavulanic acid, although harms may be underreported, according to a study published in *CMAJ* (*Canadian Medical Association Journal*).

Amoxicillin is the most commonly prescribed antibiotic for respiratory infections by [primary care](#) physicians, and is often prescribed in combination with clavulanic acid. However, the benefits of antibiotics for respiratory infections are often minor, so it is important for physicians and patients to weigh the benefits and harms of taking such medications. Because [antibiotic resistance](#) is now common, it is particularly important to use antibiotics wisely.

"The root cause of antibiotic resistance is the over use of antibiotics, and therefore these drugs should not be prescribed when the benefits do not outweigh the harms," states Dr. Christopher Del Mar, Centre for Research in Evidence-Based Practice, Bond University, Gold Coast, Queensland, Australia, with coauthors.

Evidence of common harms from antibiotics is lacking, as most data come from observational studies rather than randomized controlled trials, the gold standard in research.

Researchers conducted a systematic review of controlled trials involving adults and children to qualify and quantify harms of [amoxicillin](#) to better inform physicians of the risks and benefits of prescribing these

antibiotics. Twenty-five studies included information on harms, suggesting under-reporting of adverse effects. Antibiotics were prescribed in primary care in 15 studies (33%), dental care (9 studies, 20%), treatment (25 studies, 56%) or prevention (20 studies, 44%). The total number of participants was 10 519, with 4280 receiving only amoxicillin, 1005 receiving amoxicillin-clavulanic acid and 5234 receiving placebo.

The researchers found that diarrhea was over three times as likely in people taking amoxicillin-clavulanate. Candidiasis was also associated with the use of amoxicillin-clavulanic acid.

"Reported harms were fewer than we expected from clinical anecdotal experience and observationally-derived data, which have primarily reported common harms as rashes (at rates of 5%-8% of those treated and even higher, up to 20%, among those with mononucleosis treated with amoxicillin) and gastrointestinal disturbance," write the authors.

"Under-reporting of harms in trials remains widespread, and until that problem is addressed, under-reporting will flow to systematic reviews and other evidence syntheses such as guidelines."

"The important consequence of under-reporting of harms," said Dr. Del Mar, "is the tilting of the balance of benefits and harms towards amoxicillin."

The authors hope these findings will be useful to clinicians talking to patients about the harms as well as the general lack of efficacy for these common [antibiotics](#) to treat acute respiratory infections in primary care. However, the ability "of clinicians and patients to make fully informed decisions about using amoxicillin and amoxicillin-clavulanic acid is hampered by poor measurement and reporting," they conclude.

In a related commentary, Dr. Yoon Loke of the Norwich Medical School, University of East Anglia, Norwich, United Kingdom, writes "[These] findings are important for prescribers and patients around the world who must weigh the benefits and harms of empiric amoxicillin therapy in situations clouded by diagnostic uncertainty."

"Amoxicillin has been widely used for decades, and it seems shameful that data on harms are missing from so many trials. For this drug, clinicians and patients must not construe "absence of evidence of harm" to be the same as "evidence of absence of harm."

More information: Paper:

www.cmaj.ca/lookup/doi/10.1503/cmaj.140848

Commentary: www.cmaj.ca/lookup/doi/10.1503/cmaj.141344

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