

DOI: <http://dx.doi.org/10.33846/hn70302>
<http://heanoti.com/index.php/hn>



LETTER TO EDITOR

URL of this article: <http://heanoti.com/index.php/hn/article/view/hn70302>

Exploring the Proper and Safe Use of Amoxicillin in Patients

Abdul Qader^{1(CA)}, Laiba Usman², Ali Zia³

^{1(CA)}Drugs Testing Laboratory Faisalabad, Pakistan; pharmacistqader316@gmail.com (Corresponding Author)

²Department of Pharmacy, Lyallpur Institute of Advanced Studies, Faisalabad; Pakistan

³Department of Pharmaceutics, Government College University, Faisalabad; Pakistan

Dear Editor,

Amoxicillin is a widely used antibiotic that is effective in treating bacterial infections. This comprehensive guide includes the uses and benefits of amoxicillin and its potential side effects, so you can decide whether this medication is right for you or not. You can also get the facts about the generic name of this drug, its manufacturer, symptoms when you can use and a detailed comparison with the rest of the antibiotics in the market. It is used to treat a variety of bacterial infections. This medication stops the growth of harmful bacteria, thus allowing the body's natural defenses to fight off the infection. It is commonly prescribed for tonsillitis, bronchitis, and sinus infections ⁽¹⁾. Amoxicillin belongs to a class of antibiotics known as penicillins and has been available since 1972. It is one of the most commonly prescribed antibiotics in the United States and many other countries worldwide due to its low risk of side effects and high effectiveness in treating bacterial infections. Amoxicillin can be taken orally or intravenously depending on the severity of the infection being treated, and it is typically prescribed for five to ten-day courses ⁽²⁾.

Amoxicillin is available in different brands such as amoxicillin, amoxicillin anhydrous, amoxicot, amoxil, disperMox, moxatag, moxilin, trimox. As far as the mechanism of action of Amoxicillin is concerned, it is used to treat bacterial infections. It belongs to the penicillin family of antibiotics, which work by preventing bacteria from forming protective walls so they can't reproduce or cause infection. Moreover, the generic name of amoxicillin. Amoxicillin is a widely used antibiotic produced by different manufacturers for decades ⁽³⁾. USAntibiotics is one of the known brands making Amoxicillin and Amoxicillin Clavulanate. Moreover, the drug is available in multiple formulations, including tablets, capsules, and oral suspensions, making it easy for people of all ages. When selecting an amoxicillin product, it's essential to consider the manufacturer. Different companies use different production processes, so look for products from established pharmaceutical companies with good reputations. Additionally, check with your doctor or pharmacist before taking any medications to ensure they are safe and effective ⁽⁴⁾. Amoxicillin is a commonly prescribed antibiotic used to treat bacterial infections. It treats many bacterial infections, such as bronchitis, pneumonia, tonsillitis, and skin and urinary tract infections. It is also often prescribed for ear infections in children and adults alike. In addition, amoxicillin can also be taken on an as-needed basis for milder throat or sinus infections caused by bacteria that are not usually susceptible to other antibiotics. Its effectiveness makes it one of the most popular choices among doctors when treating various types of bacterial infections ⁽⁴⁾.

Amoxicillin is an antibiotic commonly prescribed to treat a variety of bacterial infections. To take it safely, it is essential to know the potential side effects and symptoms of amoxicillin. When taking amoxicillin, some common side effects may include nausea, vomiting, Diarrhea and abdominal pain. The patients can experience unusual tiredness or weakness, joint pain and swelling, rashes or skin itching, and headaches in more severe cases. If any of these side effects occur and persist for more than 48 hours, you must contact your doctor immediately ⁽⁵⁾. Amoxicillin, a penicillin antibiotic, has been used for decades to fight human bacterial infections. The drug is widely available and commonly recommended as a first-line treatment for strep throat and ear infections. However, it is not the only antibiotic option available. Alternative antibiotics may be prescribed when amoxicillin fails to eliminate infection or if a patient is allergic to the drug. Such alternatives may include drugs such as cefdinir and ciprofloxacin, both broad-spectrum antibiotics targeting multiple bacterial species. When deciding on appropriate antibiotic therapy, clinicians consider several factors, including safety, efficacy, and cost. Regarding safety and efficacy, amoxicillin has proved to be better than other antibiotics. Studies have shown that amoxicillin is effective against many bacteria associated with ear infections, sinusitis, and bronchitis ⁽⁶⁾.

As a first-line antibiotic, amoxicillin is often the preferred choice because it is generally well-tolerated, effective against a wide range of bacteria, and relatively inexpensive. It is instrumental in treating infections

caused by streptococcal bacteria, such as strep throat. However, alternative antibiotics may be prescribed if a patient is allergic to penicillin or if the bacteria causing the infection are resistant to amoxicillin. These alternative antibiotics may be classified as second-line or third-line treatments⁽⁵⁾. They are generally well-tolerated and have fewer side effects than more potent antibiotics. These are effective against a broad range of bacteria, making them suitable for treating various common infections. These are less expensive as compared to alternative antibiotics, making them more accessible to patients who cannot afford costlier medications. These are available in various forms, including capsules, tablets, and liquid suspensions, making them easy to administer to patients of all ages⁽⁷⁾.

On other hand, second-line antibiotics are typically reserved for cases where the first-line antibiotic has failed or has a high likelihood of antibiotic resistance. Examples of second-line antibiotics include macrolides such as azithromycin, clarithromycin, and erythromycin and tetracyclines such as doxycycline⁽⁸⁾. These can treat a broader range of bacterial infections compared to first-line antibiotics. These can be used for patients who are allergic to first-line antibiotics or have adverse reactions to the medication. These can be used as an alternative treatment option when first-line antibiotics fail to treat the infection^(6,9). These have more severe side effects than first-line antibiotics. These are also more expensive than first-line antibiotics, making them less accessible to some patients⁽¹⁰⁾.

Third-line antibiotics are even more specialized and are only used in rare cases where all other treatments have failed or where particularly resistant bacteria cause the infection. Examples of third-line antibiotics include carbapenems such as imipenem and meropenem, and vancomycin⁽³⁾. These are highly potent and effective against bacteria resistant to first-line and second-line antibiotics. These may be the only treatment option for severe and life-threatening infections caused by multidrug-resistant bacteria. These can save lives in situations where other antibiotics have failed⁽⁷⁾. These can have severe side effects and increase the risk of developing *Clostridium difficile* infection, a potentially life-threatening intestinal infection. These have limited availability and may be difficult to access in some regions or countries. These are very expensive, making them less accessible to many patients. It is important to note that second and third-line antibiotics are generally more expensive and carry a higher risk of adverse side effects than first-line antibiotics such as amoxicillin. Additionally, the overuse of antibiotics, particularly broad-spectrum antibiotics, can contribute to the development of antibiotic-resistant bacteria, which can be more challenging to treat in the future. Therefore, it is crucial to use antibiotics judiciously and only when necessary, under the guidance of a qualified healthcare provider^(6,9).

Hence, it is concluded that amoxicillin is a very powerful antibiotic used to treat many bacterial infections. It has many benefits, including being effective against hard-to-treat infections, and it can be taken in multiple forms and doses. However, when taking amoxicillin, there are side effects to consider and compare with other antibiotics. You must consult your doctor to determine the best treatment for your infection or condition.

Conflict of interest

Authors declare no conflict of interest.

Funding

Authors have not received any specific funding.

REFERENCES

1. Akhavan BJ, Khanna NR, Vijhni P. Amoxicillin. InStatPearls: StatPearls Publishing; 2021.
2. Hulscher ME, van der Meer JW, Grol RP. Antibiotic use: how to improve it? *International Journal of Medical Microbiology*. 2010 Aug 1;300(6):351-6.
3. Moore M, Stuart B, Coenen S, Butler CC, Goossens H, Verheij TJ, Little P. Amoxicillin for acute lower respiratory tract infection in primary care: subgroup analysis of potential high-risk groups. *British Journal of General Practice*. 2014 Feb 1;64(619):e75-80.
4. US Antibiotics. Antibiotics [Internet]. 2022 [cited 2023 Jan 31]. Available from: <https://us-antibiotics.com/>
5. Srinivasan A. Antibiotic stewardship: why we must, how we can. *Cleveland Clinic journal of medicine*. 2017 Sep;84(9):673.
6. Webmd. Amoxicillin ER 775 Mg tablet, extended release 24Hr Mphase - uses, side effects, and more [Internet]. 2022 [cited 2023 Jan 31]. Available from: <https://www.webmd.com/drugs/2/drug-1531-3295/amoxicillin-oral/amoxicillin-oral/details>
7. Murphy M, Bradley CP, Byrne S. Antibiotic prescribing in primary care, adherence to guidelines and unnecessary prescribing-an Irish perspective. *BMC family practice*. 2012 Dec;13:1-8.
8. NCBI. National Library of Medicine [Internet]. 2022 [cited 2023 Jan 31]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK482250/>
9. NCBI. National Library of Medicine [Internet]. 2022 [cited 2023 Jan 31]. Available from: <https://pubchem.ncbi.nlm.nih.gov/compound/Amoxicillin>
10. Kim J, Craft DW, Katzman M. Building an antimicrobial stewardship program: cooperative roles for pharmacists, infectious diseases specialists, and clinical microbiologists. *Laboratory Medicine*. 2015 Aug 1;46(3):e65-71.