

Kidney stone risk may increase with oral antibiotics.

Karla Murugan*

Department of Urology, Autonomia University of Barcelona, Spain

Abstract

Kidney stones are a common medical condition affecting millions of people around the world. They are small, hard deposits that form inside the kidneys and can cause severe pain and discomfort. While there are many factors that can contribute to the development of kidney stones, recent research has suggested that the use of certain oral antibiotics may increase the risk of kidney stone formation.

Keywords: Kidney stone, Oral antibiotics, Bacterial infection, Antibiotics.

Introduction

Antibiotics are medications that are used to treat bacterial infections. They work by killing or inhibiting the growth of bacteria, thereby helping to control the infection. Antibiotics can be administered in various forms, including oral tablets and capsules, injections, and topical creams and ointments. While antibiotics can be effective in treating bacterial infections, they can also have side effects. One of these side effects is the potential to increase the risk of kidney stone formation. A study published in the Journal of the American Society of Nephrology found that the use of certain types of oral antibiotics was associated with an increased risk of developing kidney stones [1].

The study, which was conducted by researchers at the Children's Hospital of Philadelphia and the University of Pennsylvania, analyzed data from a group of more than 25,000 patients who had been diagnosed with kidney stones. The researchers found that patients who had taken certain types of oral antibiotics in the three to 12 months before their diagnosis were more likely to develop kidney stones than those who had not taken antibiotics. Specifically, the study found that patients who had taken sulfas, cephalosporins, fluoroquinolones, nitrofurantoin, and broad-spectrum penicillins were at an increased risk of developing kidney stones. The researchers noted that the risk was highest for patients who had taken more than one course of antibiotics, and that the risk increased with longer durations of antibiotic use [2].

The exact mechanism by which antibiotics increase the risk of kidney stones is not yet fully understood. However, some researchers believe that antibiotics may alter the balance of bacteria in the gut and urinary tract, leading to an increase in the production of certain chemicals that can contribute to the formation of kidney stones. It is important to note that not all antibiotics are associated with an increased risk of kidney stone formation. In fact, some antibiotics, such

as tetracyclines, have been found to have a protective effect against kidney stones. However, the use of antibiotics should always be carefully considered, and patients should talk to their healthcare provider about the potential risks and benefits before starting any antibiotic treatment [3].

In addition to the potential risk of kidney stone formation, the use of antibiotics can also have other negative effects on kidney function. Antibiotics can alter the composition of the microbiome, which is the collection of bacteria and other microorganisms that live in and on the body. This can lead to dysbiosis, or an imbalance in the microbiome, which has been linked to a variety of health problems, including kidney disease. Antibiotics can also cause direct damage to the kidneys in some cases. For example, a rare but serious condition called Acute Interstitial Nephritis (AIN) can occur as a result of antibiotic use. AIN is an inflammation of the kidney tissue that can cause kidney failure if left untreated [4].

To reduce the risk of kidney stone formation and other negative effects of antibiotic use, it is important to use antibiotics only when necessary and to follow the prescribed dosage and duration of treatment. Patients should also talk to their healthcare provider about alternative treatment options, such as probiotics and natural remedies, which may be effective in treating certain types of infections without the potential side effects of antibiotics. In addition to the risk of kidney stone formation, the use of antibiotics can have other negative effects on kidney function. Antibiotics can alter the balance of bacteria in the gut and urinary tract, leading to dysbiosis, which has been linked to kidney disease. Antibiotics can also cause direct damage to the kidneys in rare cases, such as acute interstitial nephritis [5].

Conclusion

While antibiotics can be effective in treating bacterial infections, they can also have side effects, including an

*Correspondence to: Karla Murugan. Department of Urology, Autonomia University of Barcelona, Spain, E-mail: mkarla@nephrology.com

Received: 03-Mar-2023, Manuscript No. AACNT-23-89961; Editor assigned: 06-Mar-2023, PreQC No. AACNT-23-89961(PQ); Reviewed: 20-Mar-2023, QC No AACNT-23-89961;

Revised: 24-Mar-2023, Manuscript No. AACNT-23-89961(R); Published: 31-Mar-2023, DOI:10.35841/aacnt-7.2.140

increased risk of kidney stone formation. Patients should use antibiotics only when necessary and follow the prescribed dosage and duration of treatment. They should also take steps to reduce their overall risk of kidney stone formation, such as staying hydrated and following a healthy diet and lifestyle. If you have concerns about the potential risks of antibiotics, talk to your healthcare provider about alternative treatment options and ways to reduce your risk.

References

1. Zhang L, Zhang Q, Liu S, et al. DNA methyltransferase 1 may be a therapy target for attenuating diabetic nephropathy and podocyte injury. *Kidney Int.* 2017;92(1):140-53.
2. Kaelin WG, McKnight SL. Influence of metabolism on epigenetics and disease. *Cell.* 2013;153(1):56-69.
3. Beckerman P, Ko YA, Susztak K. Epigenetics: A new way to look at kidney diseases. *Nephrol Dial Transplant.* 2014;29(10):1821-7.
4. Chen P, Piaggi P, Traurig M, et al. Differential methylation of genes in individuals exposed to maternal diabetes in utero. *Diabetologia.* 2017;60:645-55.
5. West NA, Kechris K, Dabelea D. Exposure to maternal diabetes in utero and DNA methylation patterns in the offspring. *Immunometabolism.* 2013;1:1.