

Section: Medical Surgical Nursing

***Orthosiphon aristatus* extract for improving urinary function in patients with ureteral stones**

Nadia Rizky Anggraeny , Nurul Hidayah, Sri Hananto Ponco Nugroho, Sigit Priyanto

Authors information

Department of Nursing, Universitas Muhammadiyah Magelang, Indonesia

 **Contactable email:** nadiaanggraeny20@gmail.com / Article DOI: *On process*

Abstract

Ureteral stones are a condition in which crystals formed from urine accumulate in the ureter. Blockage of the ureter by these stones can cause severe pain, urinary tract infections, and even lead to permanent kidney damage or kidney failure. One of the treatments that can be used to manage ureteral stones is herbal therapy, such as using Cat's Whiskers Leaf (*Orthosiphon aristatus*). This study aims to apply Cat's Whiskers Leaf herbal therapy as a nursing intervention to address urinary elimination disorders in a patient with ureteral stones. The method used was a descriptive case study with a nursing care approach conducted on one patient treated in the Marwa Room of PKU Muhammadiyah Hospital Temanggung. The intervention involved administering a decoction of Cat's Whiskers Leaf (100 ml) twice daily—morning and evening—for three consecutive days. The results showed that the patient expelled gravel-like stones during urination, urine flow returned to normal without dribbling, and pain during urination was reduced. The study concludes that Cat's Whiskers Leaf herbal therapy is effective as a non-pharmacological method to overcome urinary elimination disorders in patients with ureteral stones and can serve as an alternative intervention in nursing care.

Keywords: Complementary therapy, nursing care, ureteral stones, urinary function, urological nursing

Introduction

Ureteral stones, or urolithiasis, represent a common and intensely painful urological condition resulting from the passage of renal calculi into the ureter (Corbo & Wang, 2019). The presence of a stone obstructs the flow of urine, leading to excruciating renal colic, haematuria, and significant urinary dysfunction, including dysuria and frequency (Shastri et al., 2023). While most small stones eventually pass spontaneously, the process can be slow, distressing, and potentially lead to complications such as hydronephrosis or infection. Standard management for patients awaiting spontaneous passage often involves pain control using analgesics and a class of drugs known as medical expulsive therapy (MET), primarily alpha-blockers (Fontenelle & Sarti, 2019; Bhojani et al., 2022). Despite the efficacy of MET, these pharmacological options can be associated with side effects such as orthostatic hypotension or retrograde ejaculation, prompting a continuous search for well-tolerated alternatives. The desire for more natural and complementary therapies is high among patients seeking to alleviate symptoms and hasten the stone passage process. Therefore, exploring safe and effective Phyto therapeutic agents is essential for enhancing patient care and improving symptomatic relief during this painful clinical episode.

Orthosiphon aristatus (*O. aristatus*), commonly known as cat's whiskers (*kumis kucing*), is a renowned plant in traditional Southeast Asian medicine, highly valued for its purported urological benefits (Kusmala et al., 2023). For centuries, the leaves have been brewed into a tea and consumed as a potent diuretic to treat kidney and bladder ailments, including conditions associated with stone formation (Dai et al., 2025). The plant's therapeutic profile is largely attributed to its unique phytochemical composition, which includes substantial amounts of potassium, lipophilic flavonoids like sinensetin, and various triterpenes. These compounds are believed to promote diuresis by increasing urine volume, which mechanically assists in flushing out small stones and crystal aggregates (Hsu et al., 2010). Furthermore, *O. aristatus* exhibits anti-inflammatory and antispasmodic properties that may help relax the ureteral smooth muscles, potentially easing the passage of the stone and reducing painful spasms (Kookasamkij et al., 2024; Rizvi et al., 2025; Agustina et al., 2024). Its long history of traditional use suggests a favorable safety profile when consumed at therapeutic levels. Consequently, the extract form of this plant offers a standardized method to test its traditional claims using contemporary clinical metrics.

Despite the strong foundation of traditional usage, rigorous clinical evidence specifically demonstrating the efficacy of *O. aristatus* extract in improving urinary function and facilitating stone passage in patients with confirmed ureteral stones remains limited. A focused case study is an invaluable tool for providing an in-depth, descriptive analysis of a complex intervention's effect on a single patient's clinical course. This approach allows for the meticulous tracking of subjective symptomatic improvements, such as the reduction of pain and dysuria, alongside objective

observations of urinary function following the extract administration. Documenting this sequence of events is vital for generating the necessary preliminary data to justify future research. The information gathered will directly assess the feasibility and immediate clinical impact of integrating this natural compound into the routine care of patients with urolithiasis. Therefore, the objective of this case study is to evaluate the clinical impact of *Orthosiphon aristatus* extract in improving urinary function and providing symptomatic relief in a patient diagnosed with ureteral stones.

Case Description

The patient in this case study is a 54-year-old Javanese Muslim man residing in Kedu, Temanggung City. He works as a farmer and lives with his family. The patient was admitted to the Marwa Room of PKU Muhammadiyah Hospital Temanggung on January 7, 2025, after experiencing urinary complaints for approximately two days. Prior to hospitalization, he attempted to relieve his symptoms by consuming over-the-counter medication purchased from a local shop, without seeking formal medical evaluation. Upon arrival at the hospital, the patient appeared weak and anxious, reporting symptoms of incomplete urination, a persistent urge to urinate, and pain during urination. During the initial nursing assessment, vital signs were recorded as follows: blood pressure 147/99 mmHg, body temperature 36.5°C, respiratory rate 20 breaths per minute, pulse rate 91 beats per minute, and oxygen saturation 98%. As part of the nursing intervention, the patient was administered *Orthosiphon aristatus* (commonly known as cat's whiskers) twice daily for three consecutive days—once in the morning and once in the evening. Each dose consisted of 100 ml of boiled extract made from five leaves of *Orthosiphon aristatus*. Following the intervention, the patient reported a noticeable improvement in his condition, with a significant reduction in urinary complaints. These findings suggest that *Orthosiphon aristatus* may serve as a beneficial complementary therapy in managing mild urinary tract symptoms.

Discussion

The observed clinical outcome in this case study provides encouraging, preliminary evidence suggesting the potential efficacy of *Orthosiphon aristatus* extract as a supplementary treatment for patients managing symptoms related to ureteral stones. The patient's reported improvements in urinary flow and reduction in pain (dysuria) following the introduction of the extract directly support the plant's traditional use as a robust diuretic and kidney tonic. This effect is thought to be mediated by the extract's rich content of *polyphenols*, potassium salts, and *sinensetin*, which likely increase urine volume, thereby promoting mechanical flushing of the ureter (Arif et al., 2022). Enhanced diuresis is a crucial component in medical expulsive therapy (MET), as increased fluid movement is key to facilitating the passage of small-to-moderate-sized stones. Furthermore, the documented anti-inflammatory properties of *O. aristatus* may contribute to symptomatic relief by reducing ureteral spasm and inflammation caused by the stone's physical presence (Mauludina et al., 2025). The minimal reported side effects strongly advocate for the extract's safety profile, making it a viable consideration for patients seeking natural alternatives. Consequently, the rapid symptomatic relief achieved in this case warrants further investigation into the extract's role in the management of urolithiasis.

The clinical significance of this case study lies in the potential for *O. aristatus* to enhance patient comfort and possibly accelerate the natural passage of ureteral stones without increasing the burden of pharmacological intervention. The patient's subjective relief from pain and voiding difficulty is a primary objective in stone management, as untreated pain often leads to emergency room visits and hospitalization. By offering a natural agent that supports diuresis and potentially relaxes the smooth muscle of the ureter, the extract can be seamlessly integrated with standard analgesic and MET regimens. This dual benefit addresses both the mechanical obstruction and the resulting discomfort caused by the ureteral calculus. While a single case study cannot definitively prove the extract caused the stone's eventual passage, it successfully illustrates its capacity to alleviate the associated urinary dysfunction and pain. The successful utilization of a locally available, traditional medicine source also highlights a cost-effective and appropriate treatment option for patients in resource-limited settings. Therefore, the findings underscore the importance of exploring phytotherapy as a legitimate therapeutic strategy in the field of non-invasive urology.

Despite the promising findings observed here, the results must be interpreted cautiously due to the inherent limitations of a single patient case study, emphasizing the necessity for rigorous, high-level research. The observed improvement could have been influenced by factors unrelated to the extract, such as the natural movement of the stone, increased fluid intake, or a strong placebo effect. A major limitation is the lack of objective data, such as a controlled, pre- and post-intervention imaging study (e.g., CT scan) to definitively confirm changes in stone size or location solely attributable to the extract. To conclusively validate the role of *O. aristatus* in urolithiasis management, Randomized Controlled Trials (RCTs) are essential to compare the extract's efficacy against standard MET and a placebo control. Future research should also focus on standardizing the extraction process and dosage to ensure clinical reproducibility and conduct detailed analysis on the specific compounds responsible for the diuretic and anti-spasmodic effects. Ultimately, this case study serves as a critical hypothesis-generating step, advocating for a concerted research effort to translate traditional knowledge into evidence-based clinical practice.

Conclusion

The findings from this single patient case study suggest that the administration of *Orthosiphon aristatus* extract may hold promise as a safe and effective adjunctive therapy for improving urinary function and facilitating stone passage in

patients diagnosed with ureteral stones. The patient demonstrated notable improvements in urinary flow, a reduction in dysuria, and symptomatic relief following the intervention, which aligns with the traditional use of the plant (known as cat's whiskers or *kumis kucing* as a diuretic and anti-inflammatory agent. While this observed clinical improvement may be linked to the plant's active compounds—which include potassium, flavonoids, and terpenoids—potentially increasing urine volume and relaxing the ureteral smooth muscles, the evidence remains limited to this single observation. For future studies, it is imperative to conduct larger, controlled clinical trials, ideally Randomized Controlled Trials (RCTs), to rigorously compare the effects of extract against placebo and standard medical expulsive therapy (MET) across a diverse cohort of patients with ureteral calculi of varying sizes. Furthermore, future research should focus on standardizing the extract dosage and formulation to ensure consistent bioavailability, and incorporate objective measures such as 24-hour urine volume, stone expulsion rates verified by imaging (e.g., CT or ultrasound), and detailed analysis of urine chemistry to fully elucidate the extract's impact on stone dissolution or passage.

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