

Clinical Efficacy of Intravenous Papaverine plus Ketorolac in the Emergency Treatment of Renal Colic: A Letter to the Editor

Dear Editor

We recently have read with great interest an article entitled “Clinical Efficacy of Intravenous Papaverine plus Ketorolac in the Emergency Treatment of Renal Colic: A Randomized, Double-blind Clinical Trial”, by Mohammadreza Pirouzi and colleagues, which was published in your esteemed journal (Vol 49, No. 11, November 2024).¹

The study’s focus on the simultaneous use of ketorolac and papaverine to alleviate renal colic pain, while avoiding narcotic drugs such as morphine and methadone, is both important and commendable. This approach addresses the well-documented side effects and dependency risks associated with opioid use. However, several aspects of the study merit further discussion to fully evaluate its implications and applicability in clinical practice.

First, the diagnosis of renal colic is typically based on clinical symptoms and signs, and immediate imaging is not always necessary. However, it is now common practice to perform paraclinical investigations in all patients with suspected renal colic admitted to the Emergency Department. This practice may stem from concerns about missing life-threatening conditions that mimic renal colic, such as ruptured aortic aneurysm, ovarian torsion, appendicitis, or pyelonephritis. Additionally, imaging confirmation of the cause of symptoms is often required before deciding whether a patient can be safely discharged. While computed tomography (CT) scans have become the imaging modality of choice for renal colic,² there is growing concern about the associated healthcare costs and radiation exposure. Notably, CT scans rarely alter the treatment plans of these patients, and their routine use remains a subject of debate in clinical practice. Ultrasound of the kidneys, bladder, and ureters, along with abdominal imaging (KUB), serves as a viable alternative to CT scans. The issue of radiation exposure is particularly significant in these patients, especially given the potential for cumulative radiation dose from multiple CTs during recurrent episodes of renal colic. Thus, the use of dedicated low-dose protocols is essential in these patients. In this study, CT scans were used as the final diagnostic tool. However, the rationale for this choice could be further clarified.³

Second, ultrasound is an accurate imaging technique for diagnosing renal colic.^{4,5} It also enables the diagnosis of other renal diseases or extra-renal conditions that may mimic renal colic. While ureteral stones are often difficult to visualize with ultrasound due to their retroperitoneal location, stones within the kidney are frequently detectable. Although the presence of hydronephrosis is a useful indicator in the context of renal colic, this finding should be interpreted with caution. Hydronephrosis does not always signify obstruction, and the degree of dilatation does not necessarily correlate with the severity of the obstruction. The mid-ureter is particularly challenging to assess, especially in obese patients or due to bowel interposition. Additionally, ultrasound is operator-dependent, and to minimize bias, it is recommended that ultrasounds be performed by a dedicated individual or a specialized team.

Third, the study did not address the presence of multiple stones in one or both kidneys, which could influence the severity of pain and clinical outcomes.

Fourth, the size of the stones could also affect the degree of pain and clinical symptoms experienced by the patient. Larger stones typically cause more pain as they pass through the ureter. Pelvic and calyceal stones often do not cause pain in adults, except for large deer antler stones. Pain usually occurs when a stone enters the ureter.

It is recommended that future studies involve a larger number of patients and be conducted in a multicenter manner. Additionally, the method of diagnosing urinary stones should include detailed documentation of stone size in one or both kidneys.

In conclusion, the study by Pirouzi and colleagues provided valuable insights into the potential role of papaverine plus ketorolac in the emergency treatment of renal colic. However, future studies should adopt a more comprehensive approach, including considerations of stone size, number of stones, and involvement of one or both kidneys. Additionally, multicenter studies with larger patient cohorts would enhance the generalizability and robustness of the findings.

Conflict of Interest: None declared.

Keywords • Ketorolac • Papaverine • Renal colic

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