

Original Article

Opium Dependency in Recurrent Painful Renal Lithiasis Colic

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Abstract

Background: The main goal of this study is to determine the relationship between opium dependency and frequency of urolithiasis renal colics.

Methods: In a cross sectional study we compared opium dependency in urolithiasis patients (case group) with non-urolithiasis patients (control group) and assessed urolithiasis related renal colics as risk factor to opium dependency prevalence. Dependency was defined as the diagnostic criteria specified in DSM-IV questionnaire and Urolithiasis was diagnosed by standard methods (imaging modalities as US, X-Ray).

Findings: From 450 urolithiasis adult patients (120 female and 370 male with the age range of 18-67 years) 157 (34.88%) were opium addicts, however from the 340 non-urolithiasis patients (matched age group and gender ratios) only 16 (4.70%) were opium addicts ($P < 0.001$). 56.68% of urolithiasis patients (who had a history of more than 15 renal colics (related to stone forming frequencies) were addicts for more than 10 years ($P < 0.05$). A strong positive correlation between the duration of dependency and renal colic rate was detected in these patients ($P < 0.001$, $r = 0.999$).

Conclusion: This study showed that the risk of opium dependency is higher among urolithiasis patients. Moreover, there was a relation between urolithiasis frequencies (renal colics) and the duration of dependency. Other factors such as severity of pain, perception and faith of patients in the therapeutic effects of opium or local availability of opium were also effective in opium dependency.

Keywords: Urolithiasis, Renal colic, Opium, Dependency.

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Introduction

The prevalence rate of urolithiasis has been variably reported as 4% to 15%, depending on the country or region in which the surveys were performed.¹⁻³ In the surveys taken in the United States in the year 2000, an incidence of 1116 per 100,000 were reported for 18 to 64 year old employees covered by 2 large insurance carriers.^{4,5}

Recent international literature suggests a rise in the incidence and prevalence rates of urolithiasis, showing values from 10 to 15%. Studies show a high recurrence rate involving about 70% of the patients within 20 years after the first renal colic episode and of 50% from 4 to 5 years after the first episode.^{6,7} It has been estimated that 12% of males suffer from at least one episode of ureteric colic due to stones during their lifetime and half of these patients will have at least one recurrence within five years.⁸

For pain relief in colic crisis the use of effective analgesia is essential, until the stone has passed. This is often commenced with nonsteroidal anti-inflammatory drugs (NSAIDs),⁹ although for severe symptoms the occasional use of morphine or codeine is necessary. On the other hand, most often opioids are associated with a higher incidence of adverse events, particularly vomiting that necessitates antiemetic drugs.¹⁰ Some researchers believe combining opioids with NSAIDs is the optimal evidence-based regimen to treat severe symptoms.¹¹

Repeated renal colics or insufficient treatment of them, particularly with inappropriate or arbitrary use of analgesia such as opioid agents in colic crisis, causes drug dependency in most of these patients.¹²

Recent studies have also disclosed a significant association between diseases characterized by recurrent painful crises, and analgesia dependency and pseudo dependency as a chronic pain.¹³ The combination of opioid dependency on Urolithiasis is largely responsible for more physical limitations, loss of functional roles and workdays, the frequent use of health services, and a sedated state, obviating patients from actual seeking of appropriate treatments. Moreover, this combination causes more kidney damages in this group patient. There is limited amount of data in the literature regarding the association of opium dependency with recurrent painful

renal stone formation.^{14,15} Therefore, the present study was undertaken to investigate the prevalence of opium dependency in recurrent urolithiasis and the association between them.

Methods

This is a cross-sectional study that was performed in Kerman city with a population of 700000 inhabitants. Kerman is in the south-east of Iran where opium use has a historical background. In This study we compared the prevalence of opium dependence in 450 urolithiasis patients (study group) with 340 non-urolithiasis patients (control group) from May 2005 to July 2009 in the urology clinics in Kerman. Moreover, the study group data was analyzed and evaluated in order to assess recurrent rates of urolithiasis as risk factor to opium dependency. Dependency was defined by the diagnostic criteria specified in DSM-IV and dependency assessments; data collection was on the basis of interviews and completed questioners. Urolithiasis was diagnosed by standard methods (imaging modalities as US, X-Ray) in all patients that referred to emergency rooms for renal colics. In this study we excluded non opioid analgesia users and pseudo dependents in both groups. Finally by comparison of opium dependency (any kind of opium derivatives and any method of use) between study and control groups we assessed odd ratio, relative risk of urolithiasis and also for establish correlation of renal colic rates with dependency durations we used regression analysis by the SPSS(version 18) soft ware.

Results

From 490 urolithiasis patients with a history of more than two episodes of renal colic (120 female and 370 male with the age range of 18-67 years), 450 patients, after signing an informed consent, participated in the study. 157 (34.88%) patients from the study group were opium addicts, while from the 340 patients of the control group only 16 (4.70%) were addicts ($P < 0.05$, OR = 10.85), (Figure 1, Table 1). Dependency assessment was performed on the basis of interviews and completing of the DSM-IV questioner.

Of 157 addicted patients with urolithiasis, 15 (9.55%) had a less than 5 year history of dependency, 53 (33.75%) had a 5-10 year history and finally 89 (56.68%) had more than

10 years of history of opium dependency. There was a strong positive correlation between the duration of opium dependency and renal colic rates ($P < 0.001$, $r = 0.999$) (Table 2). 53 of the urolithiasis opium addicted patients had a history of opium use previous to their first renal colic and 104 declared that their regular opium use started after the onset of repeated renal colic and that it was for pain relief $P < 0.05$. Anatomical distribution of stones in addicted and non-addicted patients were the same, but more urinary tract abnormalities were observed in the addicts' group than the non-addicts' group [45 (10%) vs. 12 (2.6%), $P < 0.05$]. Furthermore, the dependent risk in urolithiasis patients was significantly high (odd ratio = 10.85). Finally, renal damages by urinary tract stones (ureteropelvic junction obstruction, vesicoureteral reflux, non-functional or severely decreased in function kidney, sever renal parenchymal thickness reduction and frequently operated kidneys) in addict patients were higher than non-addict patients [45 (28.6%) vs. 20 (6.82%), $P < 0.05$].

Discussion

In this study, the presence of opium dependency was observed in 157 (34.88%) of

the subjects that showed a significant correlation between the number of recurrent painful episodes and opium dependency, that was related to the high frequency of opium dependency with recurrent painful episodes.

There are few studies in the international literature reporting the association between analgesia dependency and recurrent painful renal lithiasis episodes.¹⁶ Walsh believes that although opiate derivatives are the accepted analgesic treatment in renal colic, they have a high potential for dependency.¹⁷ However, some other studies showed that the chronic administration of synthetic potent opioid analgesics such as Buprenorphine to animals and recently to human volunteers has not caused physical dependency.¹⁸

Therefore, according to our study and results of the above mentioned studies, until performing further reliable studies in this field, it is better, in order to prevent physical dependency, that we restrict opioid prescription at least as first choice in chronic pains such as renal colic.

Gender ratio in our study and control groups were the same despite the fact that women's psychological state is more prone to dependency.¹⁹

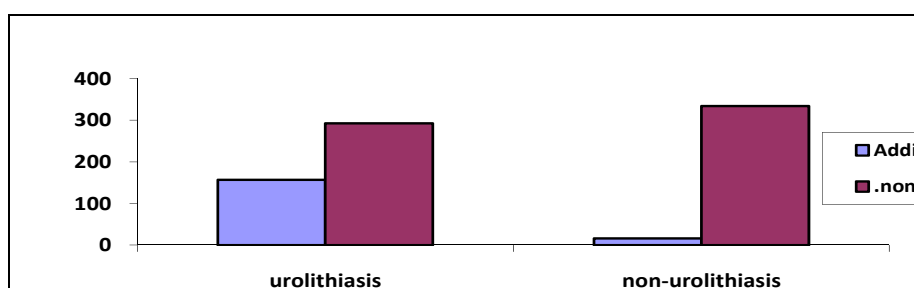


Figure 1. The comparison of prevalence of opium dependency in urolithiasis and non-urolithiasis patients

Table 1. Odd ratio of opium dependency in urolithiasis patients

Groups	Dependency		Total
	+	-	
Study (urolithiasis)	157	450	293
Control (non-urolithiasis)	16	340	324
Total	173	790	617

OR = 10.85 (95%, CI = 6.33–18.58)

Table 2. Correlation of renal colic rates with opium dependency duration

Addict patients' number	Renal colic rates (mean \pm SD)	Duration of dependency (years)
15	5 \pm 1.2	< 5
53	10 \pm 2.0	5-10
89	15 \pm 4.5	> 10

R = 0.999

In our study we have concerns about the control group selection. Group selection is always very complex in case-control studies and there are no completely satisfactory methods. Our control group consisted of patients with varieties of urology complaints mainly infertility problems and genitourinary abnormalities without urolithiasis. In addition, they were referring to the same clinic and hospital and were of a similar socio-economic level. However, other studies in this area may use another methodological strategy to select the control patients. Like patients with urinary stones without pain or patients with recurrent kidney stones that can be replaced by controls in these studies.

The prevalence of Urinary tract abnormalities in patients with urolithiasis is higher than in the normal population like Ureteropelvic Junction Obstruction (UPJ) and vesicoureteral reflux (VUR). In a study by Garcia-Nieto et al. it was shown that urolithiasis prevalence of VUR patients was higher and that oxalate-calcium stone formation in this predisposing state was high.²⁰ In other reports,^{21,22} the prevalence of VUR in patients with renal stones has been estimated to be between 4.1 and 8.5%, which is much higher than in the normal population (< 1%).²³ Urinary tract abnormalities usually associated with slowing urine flow and urine stasis, promotes urinary stone formation, intensifies renal colic and necessitates more use of potent analgesia. Our data also showed significant urinary tract anomalies among opium dependant urolithiasis patients [45 (28.6%), $P < 0.05$].

We also showed that opioid dependency is idiopathic opioid psychologic dependency [*vs.* other dependency to other analgesics

(pseudo- dependency)], so caution should be exercised in the prescription of opioid.

One of the main duties of the emergency staff is distinguishing drug seekers from patients who have a legitimate therapeutic need. However, this is not always possible in the acute care setting. Yet physicians have the dual duty of relieving pain and protecting susceptible patients from the consequences of abusing or becoming addicted to drugs.²⁴

On the whole, the problems associated with frequent opioid use for either recreational abuse or for pain control make it imperative that physicians understand and appropriately manage patients who request potent analgesia like opioids and other psychoactive drugs.

Despite our findings in this study, there is some evidence in literatures that by controlled and programmed use of opioid analgesics in chronic pain crisis may result in tolerance and low rates of dependency to opioids.^{25,26}

The limitations of our study are that we did not separate dependent- before and after starting renal colic (painful stone passing or acute urolithiasis obstructions) and that our control patients were not uniform. Because of these limitations we suggest future studies on this subject.

Conclusion

According to the results of this study, the use of opioids as first choice, frequent and intractably may cause dependency. Therefore, we recommend pain manager physicians and emergency practitioners to consider the outcomes of inconsiderate and frequent use of opioids to avoid dependency and at least in acute pain crises choose other pain killers especially NSADs.

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اعتیاد به تریاک در بیماران مبتلا به سنگ‌های ادراری با دردهای قولنجی کلیوی مکرر

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چکیده

مقدمه: هدف اصلی مطالعه حاضر، بررسی ارتباط اعتیاد به تریاک با دردهای قولنج کلیوی مکرر در بیماران دارای سنگ‌های ادراری بود.

روش‌ها: در یک مطالعه مقطعی، میزان اعتیاد به تریاک در بیماران دارای سنگ‌های ادراری با میزان آن در بیماران بدون سنگ‌های ادراری ارزیابی شد و ارتباط دردهای مکرر ناشی از سنگ‌های ادراری به عنوان یک عامل خطر برای ابتلا به اعتیاد به تریاک مورد بررسی قرار گرفت. در مطالعه حاضر، وابستگی و اعتیاد بر اساس پرسش‌نامه استاندارد DSM-IV و تشخیص سنگ‌های ادراری به روش استاندارد (سونوگرافی و رادیوگرافی‌های متداول) انجام گردید.

یافته‌ها: از ۴۵۰ بیمار بالغ مبتلا به سنگ‌های ادراری (۱۲۰ زن و ۳۷۰ مرد در فاصله سنی ۱۸ تا ۶۷ سال)، ۱۵۷ بیمار (۳۴/۸۸ درصد) به تریاک اعتیاد داشتند؛ در حالی که از ۳۴۰ بیمار بدون سنگ‌های ادراری (با تطابق گروه سنی و نسبت جنسی)، تنها ۱۶ نفر از آن‌ها (۴/۷ درصد) به تریاک اعتیاد داشتند ($P < ۰/۰۱$). $P < ۰/۰۵$ (۵۶/۶۸ درصد از بیمارانی که بیش از ۱۵ حمله قولنج کلیوی داشتند (مربوط به تکرر سنگ سازی)، سابقه اعتیاد به تریاک بیش از ۱۰ سال را نشان دادند ($P < ۰/۰۵$). در این بیماران، بین مدت وابستگی به تریاک و میزان دردهای قولنج کلیوی همبستگی مثبتی وجود داشت ($r = ۰/۹۹۹$ و $P < ۰/۰۱$).

نتیجه‌گیری: این مطالعه نشان داد که خطر اعتیاد به تریاک در بین بیماران مبتلا به سنگ‌های ادراری بالا بود و همچنین ارتباطی بین مدت اعتیاد و تعداد حملات دردهای کلیوی در این بیماران وجود داشت و نیز عواملی نظیر شدت دردها، نگرش و باور بیمار در مورد اثرات درمانی تریاک و همچنین دسترس‌پذیر بودن تریاک در محل، در اعتیاد این بیماران تأثیر داشت.

واژگان کلیدی: سنگ‌های ادراری، قولنج کلیوی، تریاک، اعتیاد.

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