

**Treatment of Renal Colic in Emergency Hebron Government Hospital**Mohammad Qtait<sup>1</sup>, Salah Tamiza<sup>2</sup><sup>1</sup>Emergency department BSN, RN, MSN in Hebron government hospital, Hebron<sup>2</sup>Emergency department emergency specialists in Hebron government hospital, Hebron**Correspondence Author:** Mohammad Qtait, Emergency department BSN, RN, MSN in Hebron government hospital, Hebron**Type of Publication:** Original Research Paper**Conflicts of Interest:** Nil

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**Abstract**

Renal colic is a common presenting clinical problem in the emergency departments (ED). Aims the present investigation aimed to point out some data concerning renal colic in Palestine, and to evaluate the practical clinic approach to it. For this reason, all the renal colic cases treated in three month in the Hebron hospital ED have been reviewed to assess the data, diagnostic and treatment patterns, and to compare them with what is reported in the literature.

**Method** we use retrospective study by review of file of emergency department in three month of renal colic or urinary stone.

**Result** Renal colic or stone were diagnosed in three month 300 cases (1%) from all vaster of ED; 66 % of them were recurrent stone formers; the males 61% , female 39%, The age distribution, showed a higher rate from 25 to 44 years of age, Ultrasonography (US) was the examination in 72% cases, 99% lab test urine analysis. NSAIDs were always used (90%), association with Hyoscine butylbromide, narcotic as pethidin(10%). The data of our investigation are in a substantial agreement with the reported literature bout features of renal colic and its treatment. On the contrary, the diagnostic approach is mainly based on US and lab test. CT-scan was not used in ED .

**Conclusion**, the data of our investigation are in a substantial agreement with those reported in the literature as far as concerns of renal colic and its treatment. The diagnostic approach is mainly based on US whereas urine examination, most of patient given NSAIDs, and Hyoscine butylbromide and 10% given narcotic. In pale stain treated the renal colic as national guide. The most use diagnosis laboratory test urine analysis then US in ED.

**Keywords:** Renal colic, Kidney stones, Emergency department.

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**Introduction**

Pain is a very common reason for coming to emergency departments (EDs) (Paris & Stewart, 1988). Stone in urinary system is a common disease in emergency department ED with prevalence between 7 – 21 cases per 10.000 in habitants in Western countries.( Amato, 2004). Renal colic is defined as severe intermittent flank pain that radiates to the groin, lower abdomen, or genitalia due to the passage of a stone through the urinary system. The classic signs characterized by acute flank pain which sometimes fluctuates an radiates to the groin and scrotum in males (Seifter, 2008). The probability of forming stones differs according to genetic, metabolic, socio-economic, cultural and geographic factors (Coe, 1992).

In fact, a patient affected by renal stone is not always likely to undergo a spontaneous expulsion, which could be achieved by means of relapsing colic that would require frequent administration of analgesic and antispasmodic drugs, and often lead to the need of accessing emergency department. Hebron is the largest city in the West Bank and have a population of around 706.000 (PBCS report, 2015). These people are the target centers of the service offered by the hospitals operating in Hebron. In Hebron, there are governmental and non-government hospitals that operates at high capacity to meet the population demands. In congruence with large demands and overloaded hospitals. Hospitals in Hebron operate at the limits of their effective capacity or even they operate over capacity in some of the hospital departments. Alia Hospital is the most crowded in Palestine, operating at 124%, average occupancy rate in 2015(MOH, annual report, 2015). The second hospital in the West bank crowded ED is Hebron hospital is the large in 2015, 60750 patient seen in ED, More than 1000 patient complain from renal colic (MOH, annual report, 2015). No papers have been published treatment of renal colic delivered in Palestine emergency departments.

Renal colic pain is often described as the worst pain the patient has ever experienced, Consequently, the use of effective pain killers like; non steroidal anti-inflammatory drugs (NSAIDs), and opioids, or a combination of medications (anti-inflammatory and spasmolytic agents), play important roles in the treatment of these patients (Holdgate. 2005).

The effect of NSAIDs on relieving pain in renal colic is similar to opiates, the disadvantage of NSAIDs, in the oral or rectal form, is the delayed onset time compared with intravenous morphine. Intravenous forms of NSAIDs are available and have a rapid onset, the side effects from the intravenous form of NSAIDs have been reported more frequently than for other types of drugs, complications of NSAIDs include; nausea, vomiting, feeling of heat or pressure in the chest, fatigue and lethargy (Golzari,el , 2014). NSAIDs have the advantage of decreasing ureteral smooth muscle tone, thereby directly treating the mechanism by which pain is thought to occur, NSAIDs are contraindicated in patients with renal failure and are not recommended in patients with certain diseases which could involve the kidney .In these cases other analgesics should be used. Diclofenac is a common NSAID used in patients with renal colic. Both parenteral opioids and non steroidal anti-inflammatory drugs (NSAIDs) are commonly used to provide relief from renal colic, and both can have adverse effects. Although opioids are effective and provide rapid analgesia in renal colic, hypotension, nausea, vomiting and dizziness are not uncommon after narcotic administration. Paracetamol is analgesics are commonly employed in combination with spasmolytic drugs for the treatment of renal and ureteral colic. The involvement of prostaglandins promoted clinical experimentation to investigate the effectiveness of non-steroidal anti-inflammatory drugs (NSAID) in alleviating the pain of renal and ureteral colic. These drugs block the enzyme cyclo-oxygenase and hence, inhibit prostaglandins formation. Several studies demonstrated that NSAID's such as diclofenac sodium (75 mg intramuscularly) is more effective than pethidine (100 mg intramuscularly) (Thompson, el, 1989), other narcotic analgesics (Lundstam, 1982), spasmolytic agents (fenpipramide methbromide and pitofenone hydrochloride) (Sanahujael ,1990), Although the efficacy of spasmolytic agents in renal and ureteral colic has been debated, they are widely used alone or in combination with narcotic analgesics in many countries including Saudi Arabia and other Arabian Gulf countries. In a renal colic study, a single 20-mg intravenous dose of hyoscine N-butylbromide (Buscopan) demonstrated that this spasmolytic agent has a low analgesic effect when it is used as single therapy or with a 2.5-gm dose of dipyron (Lloret el , 1990).NSAIDs alone or in combination with opioids have been used to treat renal colic pain for a long time, analgesic effects of these

medications are due to the inhibition of prostaglandin synthesis. As a result, NSAIDs prevent afferent arterial vasodilation and increase vascular permeability, which cause diuresis and increased pressure within the renal pelvis. NSAIDs also reduce edema, inflammation and ureter muscular hyperactivity (Serinken, 2008)

Hyoscine Butyl Bromide is anti-muscarinic agents are effective in the treatment of smooth muscle spasms (especially gastrointestinal). Ureteral peristaltic activity of the genitourinary system is controlled by the autonomic nervous system so the use of anti-muscarinic agents can be effective. (Davenport, 2005). The present investigation aimed to point out some data concerning renal colic in Palestine, and to evaluate the practical clinic approach to it. For this reason all the renal colic cases treated in three month in the Hebron hospital ED have been reviewed to assess the data, diagnostic and treatment patterns, and to compare them with what is reported in the literature.

### **Purpose of the Study**

The purpose of study present investigation aimed to point out some data concerning renal colic in Palestine, and to evaluate the practical clinic approach to it.

### **Method**

**Retrospective study, take** the medical records of the ED in Hebron Hospital, from from 1 may to 31 July 2016, were reviewed. All the records with a final diagnosis of definite renal colic or urinary tract stone were selected and collected for the analysis. The records were carefully reviewed and unconfirmed diagnoses such as, for example: “suspected renal colic” or “pain probably due to urinary tract disease”, were excluded from the final analysis.

The date and time of visit was recorded together with the patient’s age and sex, and, if any, previous history of renal colic or urinary stones. Information concerning the clinical presentation, namely abdominal or lumbar pain, side of the pain, association with hematuria or accompanying symptoms such as nausea, vomiting or fever, were recorded as well. In The diagnostic procedures used were specified in every patients, namely US, and urine examination. Similarly, the given therapy, namely NSAIDs, antispastic and analgesic medications, opioids, were recorded. Lastly, the outcome was reported, that is admission, discharge or lost at follow up. Inclusion criteria were at least 18 years of age (and less than 65 years), Exclusion criteria were: not diagnosis renal stone, renal failure, diabetes, hypertension, pregnant and breast feeding women.

### **Study setting**

This study was conducted in the West bank in emergency department Hebron government hospital south of West Bank.

**Ethical consideration and accessibility:** Permission obtained to access the MOH hospitals report when approval by the director of hospital services. Not use the name or taken the name of participant.

**Data analysis procedure:** After data collection, from file filled in the table and entered and analyzed using the Statistical Package for Social Science program (computer soft ware SPSS V.22) for descriptive and inferential statistics. Frequencies were used to present the distribution of study variables..

### **Result**

There were a total of 27,623 ED visits recorded from 1 may to 31 July 2016. Renal colic episodes were diagnosed in 300 cases (1%); 198 (66,6%) had a previous history of renal calculi and 183 (61%) were men, 39 % female.

The age distribution shows a higher rate among young adults (from 25 to 45 years of age). The seasonal distribution outlines the maximum risk during summer months, particularly in July, and the minimum number of cases during the winter months.

Pain accounted for the chief complaint in all the cases, and was associated with nausea and vomiting in 39% of cases. Fever was present in five patients (1%). Gross hematuria was observed in only 4% of cases, but microscopic hematuria was present in 92% of the urine performed. total of 99 % had urine analysis, and CBC, 69% had BUN and creatinine, An US was the sole examination in 72% of cases.

About 12% of the patients did not receive any drugs in the ED either because they were already treated at home or any out medical center, or because pain had subsided in the ED.

300 patients (96%) were discharged, 12 patients (4%) were admitted to the urology ward after an urologic consultation (mostly for refractory pain, fever or ultrasound evidence of severe obstruction).

**Table (1) Demographics.**

Items	Percent	frequency
<b>Gender</b>		
Male	61%	183
Female	39%	117
<b>Age</b>		
less than 30	44.4%	133
Between 30-44	43.3%	130
More than 45	12.2%	37
<b>Colic</b>		
<b>First</b>	<b>33.4%</b>	
<b>Recurrent</b>	<b>66.6%</b>	
<b>Laterality of stone</b>		
<b>Left side</b>	<b>59%</b>	
<b>Right side</b>	<b>41%</b>	
<b>Shift</b>	<b>Number</b>	<b>Percent</b>
<b>Day</b>	<b>96</b>	<b>32%</b>
<b>Evening</b>	<b>132</b>	<b>44%</b>
<b>Night</b>	<b>72</b>	<b>24%</b>

**Table (2) method of diagnosis**

Method of diagnosis	Lab test	Radiology US	Other
Urine analysis	99	72	2

**Table (3) type of medication use**

Drug use	Percent	No
Hyoscine butylbromide,	99%	
Pethidin,	10%	
Diclofen sodium,	90%	
Take all	10%	

When therapy was given, NSAIDs (diclofen sodium) were always used (90%) in association with opiate ( tramadol) (9%) and 96 % from patient given (hyoscine butylbromide). 10% given pethidin, 10 % given all ( diclofen sodium, hyoscine butylbromide, pethidin).

**Discussion**

One of the primary goals of emergency department staff is the prompt, effective alleviation of pain. Historically, attempts to achieve this aim have been poor both in provision of analgesia and delay to analgesia (Ducharme & Barber, 1995). The results of our investigation confirm that renal colic pain is a quite frequent cause for ED visits. Since the Hebron Hospital inhabitants area, an annual incidence of 1% inhabitants may be estimated. Therefore, the epidemiological features we observed in our region are very similar to that reported in the literature (Ramello, 2000).

Diagnosed in 300 cases (1%) from total this rate of renal colic or stone (1%) is the same that was reported in world study involving more than 100 million emergency department patient presentations Brown J (2006). Even if in many cases the clinical presentation was sufficient to diagnose a renal colic episode, US was performed in 72% of our patients due to less cost for hospital and no side effect on patient. Instead, a KUB was not performed and not request ED of them. This is not in keeping with Italian guidelines that suggest US as the initial diagnostic steps because the combination increases the sensitivity and specificity for urinary tract stone diagnosis (Drudi, 20014). On the other hand, US is a quick, simple, accurate and low cost procedure.

90 % from patient given NSAIDs, 99% from patient use Hyoscine butylbromide, less cost and effect and not effect in balance as narcotic and that accept with study to Regarding treatment for renal colic, our data are in keeping with the recommendations of the literature. Several studies show that NSAIDs administration is the first choice of analgesia for acute renal colic, and they are at least as effective as narcotics (Das D, Teece,2006).

The urinalysis is use for every patient complain from abdominal pain and its available in an emergency setting and doctors request its not cost and see the microscopic hematuria before US because of the need to have filled bladder for this examination.

This study does not seen report use of calcium channel blockers or a-antagonists, and rom study the physician use the same protocol in the treatment of renal colic.

The most of patients were able to be discharged. Admission was only required for complicated cases (fever ,single kidney obstruction) or for those patients who could not achieve pain relief.

In conclusion, the data of our investigation are in a substantial agreement with those reported in the literature as far as concerns of renal colic and its treatment. The diagnostic approach is mainly based on US whereas urine examination, most

of patient given NSAIDs, and Hyoscine butylbromide and 10% given narcotic. In pale stain treated the renal colic as national guide. The most use diagnosis laboratory test urine analysis then US in ED.

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