

Treatment of renal colic with injectable aspirin (Aspegic)

Falih M. Al-Obadi,¹ Jinan I. Mobarak² and Abdullah M. Jawad³

معالجة المغص الكلوي بحقن الأسبيرين (أسبيجيك)

فالح محمد حسن العبيدي وجنان إبراهيم مبارك وعبد الله محمد جواد

خلاصة : تمت دراسة أربعة وأربعين مصابا بالمغص الكلوي الشديد لمعرفة مدى استجابتهم لجرعة مقدارها 500 ميليغرام من الأسبيرين القابل للحقن (أسبيجيك) ، أعطيت مرتين يوميا لمدة يومين . ولقد وجد أن 22.7% من المرضى قد شفوا تماما من الألم بعد الحقنة الأولى ، وأن 72.7% أبدوا درجات متباينة من التحسن . وكان التقييم الإجمالي عند انتهاء المعالجة أن الاستجابة كانت ممتازة في 63.6% من الحالات . ولم يظهر مريضان أي استجابة للمعالجة . كما أن تسعة عشر مريضا (43.2%) شعروا بخروج حصاة مع البول أو شاهدوها . ولم تحدث أية آثار ضائرة مهمة لدى أي مريض . وهكذا فإن الأسبيجيك يمكن أن يكون دواء مفيدا في المعالجة الإسعافية لحالات المغص الكلوي الشديد .

ABSTRACT Forty-four (44) patients with severe renal colic were studied for their response to 500 mg injectable aspirin (Aspegic) administered intravenously twice daily for two days. It was found that 22.7% reported complete relief from pain after the first injection and 72.7% showed various degrees of improvement. In the overall assessment at the end of treatment, 63.6% showed an excellent response. Two patients did not show any response to treatment. Nineteen patients (43.2%) had felt or seen the stone pass out in urine, and none experienced any major adverse effects. Aspegic could be a useful drug in emergency treatment of severe renal colic.

Traitement des coliques néphrétiques par aspirine injectable (Aspégic)

RESUME La réponse de quarante-quatre patients souffrant de coliques néphrétiques graves à l'injection par voie intraveineuse de 500 mg d'aspirine injectable (Aspégic) deux fois par jour pendant deux jours a été examinée. On a trouvé que 22,7% des patients signalaient avoir été soulagés complètement de la douleur après la première injection et que 72,7% d'entre eux présentaient des signes d'amélioration à divers degrés. Lors de l'évaluation générale à la fin du traitement, on a constaté que la réponse au traitement était excellente chez 63,6% des patients. Il n'y a eu aucune réponse au traitement chez deux patients. Dix-neuf patients (43,2%) ont senti ou vu le calcul passer dans les urines et aucun patient n'a eu de réactions indésirables majeures. L'Aspégic pourrait être un médicament utile dans le traitement d'urgence des coliques néphrétiques graves.

¹Assistant Professor, Department of Surgery; ²Radiologist, Department of Surgery; ³Assistant Professor, Department of Pharmacology, College of Medicine, Basra, Iraq.

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Introduction

Aspirin-like drugs, such as indomethacin and other non-steroidal anti-inflammatory drugs, have been widely investigated for their efficiency in the treatment of renal colic since 1978 [1]. Indomethacin, diclofenac sodium, ketoprofen and dipyron, administered by various routes, have all been found to be effective in renal colic [1-8]. Their effectiveness has been attributed to their ability to inhibit the synthesis of prostaglandins, which are thought to be involved in the pathophysiology of renal colic [1-4].

We had earlier observed that injectable aspirin seemed to be very effective in relieving the pain of renal colic. Therefore, the aim of this study was to assess the response of 44 patients with severe renal colic treated with injectable aspirin; a drug that has not yet been tried in the treatment of this condition.

Subjects and method

A total of 44 referred patients with severe renal colic (29 males and 15 females, mean age 40.5 ± 16.2 years, range 18-65 years) admitted to the first surgical unit of the Teaching Hospital in Basra during the second half of 1995 were followed. Renal colic was diagnosed on a clinical basis, by ultrasound examination (37 patients), and by intravenous pyelogram (7 patients). Pregnant women, children, patients over 65 years or those with a history of bronchial asthma, renal or hepatic diseases, cardiac failure, gastrointestinal ulceration and gout were excluded from the study. Care was taken to exclude pre-existing diseases of the kidney apart from renal colic; such diseases are known to increase the risk of de-

veloping acute renal failure after the use of aspirin and aspirin-like drugs [9].

Results of the ultrasound investigation performed for 37 patients prior to treatment are as follows: mild hydronephrosis/hydronephrosis (33 patients); pelvic stone (2 patients); lower pole stone (2 patients); normal ultrasound (5 patients).

Each patient was given 500 mg injectable aspirin intravenously (Aspegic [lysine acetylsalicylic acid], Synthelabo, France) on admission and twice daily thereafter for two days. Patient response was assessed according to a three-point scale (no change, improved, complete relief). The overall assessment at the end of treatment (physician and patient assessment) also used a three-point scale (no change, good, excellent).

Ultrasound examination was repeated at the end of the treatment period for six patients and intravenous pyelogram for one only.

Results

Patient assessment of response one hour after the first injection showed that complete relief was reported by 10 patients (22.7%), various degrees of improvement by 32 patients (72.7%), while two patients (4.6%) showed no response. The patients showing no response after one hour were given an intravenous injection of a narcotic analgesic.

Overall assessment of response at the end of the treatment period showed an excellent response in 28 patients (63.6%), a good response in 14 (31.8%) and no change in 2 (4.6%).

Ten patients (22.7%) were free from pain within the first hour after Aspegic injection and complete freedom from pain at the end of the first day of treatment was re-

Table 1 Time for complete freedom from pain to occur

Time after the first Aspegic injection	Patients reporting complete freedom from pain	
	No.	%
Within 1 hour	10	22.7
6 hours	28	63.6
12 hours	35	79.5
24 hours	41	93.2
48 hours	42	95.5

ported by 41 patients (93.2%) as shown in Table 1.

Nineteen patients (43.2%) reported that the stone was passed in the urine after Aspegic treatment within the two-day treatment period. No major adverse effects were reported nor were there any abnormal changes in urine on examination.

Discussion

Distension of the renal pelvis seems to be responsible for the development of renal colic [1-4]. The rise in pelvic pressure due to a ureteric stone can result from various mechanisms such as increased diuresis, inflammatory oedema around the stone and increased frequency of ureteric contractions [1-4,9,10].

Prostaglandins can play an important role in these mechanisms [5,11,12] as shown in Figure 1. Therefore, inhibition of prostaglandin synthesis by drugs such as non-steroidal anti-inflammatory drugs could contribute to the lowering of pelvic pressure and distension, and thus to the relief of renal colic. This has been found to be the case with several aspirin-like drugs [1-8]. A recent study in our departments showed that the spasmolytic commonly

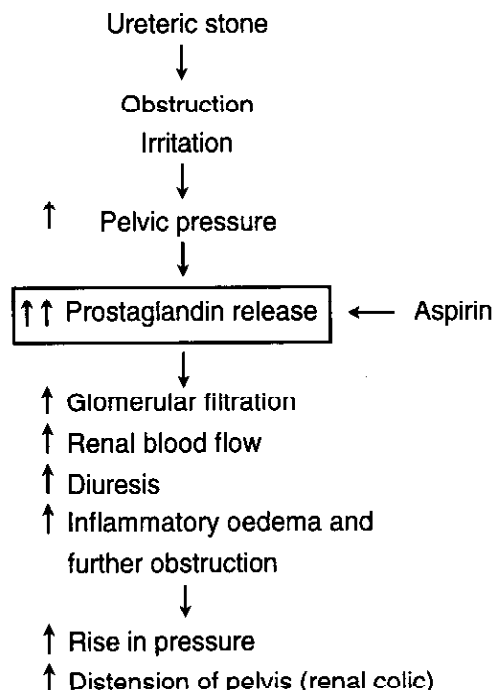


Figure 1 Possible mechanisms involved in the development of renal colic

used for treatment of renal colic in Basra (hyoscine-N-butylbromide) is much less effective than the non-steroidal anti-inflammatory drug, diclofenac sodium [13]. Several other studies have shown that aspirin-like drugs are an effective alternative to, or superior to, various spasmolytics and to pethidine [14-18]. Other drugs, probably acting through the same mechanisms, were also shown to be of benefit in the treatment of renal colic, including nifedipine [17] and desmopressin [19].

To our knowledge, injectable aspirin has not yet been investigated for this condition. We found the drug was not only effective in relieving the pain (93.2% became symptom-free 24 hours after starting the

treatment), but also seemed to help the stone to pass in urine in a short time (43.2% of the patients felt or saw the stone pass in urine within the two days of treatment). It is probable that aspirin, by intravenous injection, is rapidly effective in relieving the oedema and in reducing the exaggerated ureteric contractions initiated by the presence of a ureteric stone, thus helping it to pass.

Prostaglandins have been found to contribute more to the maintenance of renal functions under abnormal rather than nor-

mal circumstances [20]. Therefore, inhibition of their synthesis may have a harmful effect, although reported to be reversible and preventable in patients with pre-existing serious renal dysfunction [21,22]. The harmful effect might not occur from a short course such as the one used in this study. However, the drugs should be avoided in the presence of serious renal diseases.

In conclusion, injectable aspirin could be very useful in relieving the pain of severe renal colic and possibly facilitating the expulsion of stones in urine.

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