

## Conservative treatment of acute appendicitis

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### ABSTRACT

**Objective:** To define the value of Tamsulosin drug addition to antibiotics (Ceftriaxone and Metronidazole) in conservative treatment of nonperforated acute appendicitis.

**Patients and methods:** Prospective clinical study performed in Al-Jamhoory Teaching Hospital covering a period from Jan 2010 to Jan 2012. Formal consent from the patients and ethical approval were obtained. One-hundred and two patients including 74 males and 28 females, with age range of 17-45 years were admitted to the surgical unit number 3 complaining of acute appendicitis. Detailed clinical history was taken and clinical examination was carried out. All the patients had general urine examination (G.U.E), ultra sound (U.S) of the right iliac fossa and determination of serum c.reactive protein level. Those who had complicated appendicitis were excluded from the study. The patients were randomly divided into two groups A and B.

Group A: Fifty one patients were given 500 mg of Ceftriaxone and 500 mg Metronidazole, both I.V twice daily.

Group B: Fifty one patients were given the antibiotics regime plus Tamsulosin 0.4 mg orally once daily.

The patients who had good signs of response (decrease or disappearance of the abdominal pain, tenderness and rebound tenderness and return of appetite) in the first 24 hours of the treatment continued the treatment for further 5 days, if there was no good response immediate appendicectomy was done. There was follow up of discharged patients for 4 months.

**Results:** Group A: Forty-one patients out of 51 (80.39%) had a good signs of response (decrease or disappearance of the abdominal pain, tenderness and rebound tenderness and return of appetite) within the first 24 hours post presentation while 10 patients needed appendicectomy. Group B: Forty-nine patients (out of 51) 96.07% had good signs of response (decrease or disappearance of the abdominal pain, tenderness and rebound tenderness and return of appetite) within the first 24 hours post presentation and only 2 patients needed appendicectomy. Those who were discharged after conservative treatment were followed up for 4 months. Five patients in group A and 3 patients in group B had recurrence of symptoms and signs of acute appendicitis and appendicectomy was performed for them.

**Conclusion:** Tamsulosin added to antibiotics for treatment of acute appendicitis is safe and resulted in speedy recovery of the patients with reduced recurrence of the condition.

**Keywords:** Appendicitis, Conservative treatment.

### العلاج التحفظي لإلتهاب الزائدة الدودية الحاد

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فرع الجراحة، كلية الطب، جامعة الموصل، الموصل، العراق

#### الخلاصة

**الهدف:** بيان فائدة إضافة عقار التامسوليسين إلى المضادات الحيوية في علاج إلهاب الزائدة الدودية التحفظي.  
**طريقة العمل:** دراسة مستقبلية أجري في المستشفى الجمهوري التعليمي في الموصل من ك ٢٠١٠ الى ك ٢٠١٢. شملت ١٠٢ مريض ومريضة مصابون بإلتهاب الزائدة الحاد, قسم المرضى بطريقة عشوائية إلى مجموعتين. مجموعة أ: أعطيت المضادات الحيوية، المجموعة ب: أعطيت المضادات الحيوية وعقار التامسوليسين.

**النتائج:** تم متابعة المرضى خلال الأربع والعشرون ساعة الأولى من قبل جراحين مجهولون تماما بتبعية المريض إلى مجموعة من المجموعتين.

المجموعة أ:- واحد وأربعون مريض ومريضة من مجموع ٥١ مريض ٨٠,٣٩% أظهروا إستجابة جيدة للعلاج خلال الأربع وعشرون ساعة الأولى من بدء العلاج (إختفاء الآلام في البطن وعودة الشهية للطعام) بينما إحتاج ١٠ مرضى لعملية بتر الزائدة. المجموعة ب:- تسع وأربعون مريض ومريضة من مجموع ٥١ مريض ٩٦,٠٧% أظهروا إستجابة جيدة للعلاج في الأربع وعشرون ساعة الأولى من بدء العلاج وإحتاج مريضان فقط إلى عملية بتر الزائدة. جرت متابعة المرضى الذين شفوا بعد العلاج التحفظي لمدة أربع أشهر لظهور علامات إنتهاب الزائدة الدودية وكان هناك خمسة مرضى في المجموعة أو ثلاثة مرضى في المجموعة ب ممن عانوا من الرجعة وأجريت لهم عملية بتر الزائدة.

**الإستنتاج:** إضافة عقار التامسوليسين إلى المضادات الحيوية في علاج إنتهاب الزائدة التحفظي أظهر نتائج جيدة وقلة عدد المرضى الذين عانوا من عودة المرض.

**الكلمات المفتاحية:** إنتهاب الزائدة الدودية، العلاج التحفظي.

## INTRODUCTION

In spite of the progress in surgical practice, acute appendicitis is still considered as one of the most common surgical emergencies and appendectomy is still the most frequent procedure performed.<sup>1,2</sup> Pathogenesis of acute appendicitis is multifactorial including infection and obstruction. There has been dramatic reduce in acute appendicitis since the use of antibiotics,<sup>3,4</sup> so it became feasible to treat acute appendicitis conservatively.<sup>5</sup>

In this study, Tamsulosin is used for the first time in combination with antibiotics in conservative treatment of the non-complicated acute appendicitis. Tamsulosin is an alpha 1A-receptor blocker which relaxes smooth muscles. It is primarily used in the treatment of prostatic hypertrophy. It's main side effect is dizziness. I think that Tamsulosin causes relaxation of the appendicular muscle which enhances the drainage and relieves the intramural pressure of the inflamed appendix. Hence, it gave better results if given with antibiotics in the treatment of nonperforated appendicitis than antibiotics alone.

## PATIENTS AND METHODS

From Jan 2010 to Jan 2012, 102 adult patients complaining from non-complicated acute appendicitis were admitted to the surgical unit number 3 in Al-Jamhoory Teaching Hospital in Mosul. they were 74 males and 28 females. Full history was taken and thorough clinical examination was done. All of the patients were sent for G.U.E, white blood cell (WBC) count, serum c-reactive protein and ultra sound U.S. of the abdomen.

Consent from the patients and ethical approval from the ethical committee were obtained.

The patients were randomly divided into two groups.

Group A:- The patients were treated conservatively with antibiotic only (Ceftriaxone 500mg I.V twice daily with Metronidazole 500mg I.V twice daily).

Group B:- Were given the same antibiotic of group A plus Tamsulosin 0.4mg orally once daily.

The patients in both groups were monitored blindly by separate surgeons in our unit in the first 24 hours of the treatment for signs of response to the treatment (decrease or disappearance of the abdominal pain, tenderness and rebound tenderness and returning of appetite). Those who showed these signs of response were maintained on the treatment for 5 days. Those who had no signs of recovery in the first 24 hours, appendectomy were done for them immediately. Four months follow up for those who were discharged from the hospital was carried out.

## RESULTS

Group A:

Forty one patients out of 51 (80.39%) showed good response (decrease or disappearance of the abdominal pain, abdominal tenderness and rebound tenderness and returning of appetite) in the first 24 hours of treatment with the antibiotics while ten patients showed no such signs. Appendectomy was performed for them.

Group B:

Forty-nine patients out of 51 (96.07%) showed good signs of response and recovery and only 2 patients needed appendectomy.

**Table 1** shows the number of patients with recovery in the first 24 hours in both groups.

Good response of the patients in both groups in relation to time table in the first 24 hours of the conservative treatment showed clearly that the response to the treatment started earlier in group B than those in group A and the final result is much better in group B than in group A as demonstrated in **Table 2**.

Good appetite returned after 10-16 hours from the commencement of the conservative treatment in 44 patients in group B while 38 patients in group A did so.

Patients with high c.reactive protein level (4 mg/dL) (10 patients in group A and 2 patients in group B) showed high index of failure of the conservative treatment in the first 24 hours (persistent and increase of the abdominal pain, tenderness, and rebound tenderness). Also the recurrence rate of acute appendicitis after 4 months of follow up is noted to be high in patients with high c.reactive protein level.

Recurrence of signs and symptoms of acute appendicitis after 4 months of follow up occurred in 5 (9.8%) patients from group A, 3 (5.9%) patients in group B, and all were operated upon immediately.

Ultra sound (US) examination of the abdomen showed no calcification in the appendix. No mortality was recorded in both groups.

**Table 1.** Number of patients recovered within the 1<sup>st</sup> 24 hours of treatment.

Group	No of recovered patients	No of patients needed operation	Percentage
Group A	41	10	80.39%
Group B	49	2	96.07%

**Table 2.** number of patients recovered in both groups in relation to the time table in the first 24 hour of the treatment.

Groups	4-10 hours	11-16 hours	17-24 hours	No response
Group A	6 Patients	20 Patients	15 Patients	10 Patients
Group B	12 Patients	29 Patients	8 Patients	2 Patients

## DISCUSSION

In spite of all the medical progress acute appendicitis is still considered as one of the most surgical emergencies and appendectomy is still the most frequent surgical procedure performed.<sup>1</sup> In the United States nearly 300,000 appendectomy is annually performed.<sup>6</sup> Nearly 50% of all emergency appendectomies were performed on normal or mildly inflamed appendix.<sup>7</sup>

The advent of antibiotic use caused drastic reduction in both mortality and morbidity of acute appendicitis.<sup>8</sup> Hence, conservative treatment of non-complicated appendicitis became more popular.<sup>9</sup> In this study, Tamsulosin is added to the antibiotics regime (Ceftriaxone and Metronidazole). In conservative treatment of non-complicated acute appendicitis the use of this mixture yielded an excellent results in group B (96.07% recovery) versus (80.39% recovered in group A), similar results were seen in the study the Similes *et al*<sup>10</sup> On reviewing literature concerning the conservative treatment of acute appendicitis, I found that Tamsulosin had not been used before in the treatment of this condition, so this is the first time this drug is used in combination with antibiotics in the treatment of non-complicated acute appendicitis. Group B showed good response in relation to the time **Table**, 12 patients showed such signs in the first 10 hours versus 6 patients in group A.

Two patients in group B showed no response to the conservative treatment and 10 patients from group A showed the same results, so appendectomy was carried out.

Regaining of appetite and feeling of well being is good in both groups. However, group B did better than group A (84.6% versus 73.07%) **Table 2**.

This study showed that elevated serum c-reactive protein level (4bmg/dl) plays a key role in predicting failure of the conservative treatment in the first 24 hours, which is also seen in the study the Liu *et al*<sup>11</sup> No calcified appendicolith by US examination was detected in our patients so it has no role in the predication of failure of the conservative treatment contrary to the findings reported by others study.<sup>11</sup>

Recurrence of acute appendicitis 4 months after the first presentation was reported in 5.9% in group A compared to 9.8% in group B. High level of serum c-reactive protein at presentation has

predictive value of recurrence of acute appendicitis, comparable to other studies.<sup>11,12</sup>

Conservative treatment of acute appendicitis is safe because delaying of appendectomy for 24 hours after presentation did not increase the rate of perforation or other complications as seen by others.<sup>13-16</sup>

Tamsulosin which is an alpha 1A-receptor blocker and smooth muscle relaxant can result in better drainage and relieving the intra luminal pressure in the inflamed appendix. It has minimal side effect, (mild dizziness). Adding it to the antibiotics combination in the conservative treatment of non-complicated appendicitis will definitely lead to a better results than antibiotics alone.

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