

## Medical Management of Surgical Appendix

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### Abstract

*Objective:* The aim of this study is to evaluate the feasibility and safety of non operative [1,2] treatment of acute appendicitis with antibiotics [1,2,3] and avoiding surgery. Although the standard treatment of acute appendicitis [since 1883] is Appendectomy [2,3,4]. Mortality rate is 0.7% and 2.4% [1,4] in patients with and without perforation respectively. Also in a military setting and in maritime setting [4], medical management is preferred naturally because it simplifies the situation. *Materials and Methods:* This study was done in MVJ MC & RH, Hoskote, Bangalore From 17<sup>th</sup> march 2015 to 30<sup>th</sup> march 2016, patients who were diagnosed of acute Appendicitis were evaluated for medical Management. *Discussion and Conclusions:* This study indicates that Appendicitis can be effectively managed conservatively in upto 88-92% cases [7,8].

**Keywords:** Appendicitis; Antibiotics; Conservative Management; Appendectomy; Surgery; Appendicular Mass.

### Introduction

Acute Appendicitis is one of the most common surgical emergencies and is a lifetime risk in 7-8% [1], world wide standard care is Appendectomy. Mortality rate is 0.7% and 2.4% in patients with and without perforation [2] respectively and in 15-30% cases

appendix is found to be free of disease upon resection

Appendectomy is associated with surgical wound infections, pelvic abscess, ileus, pneumonia, intestinal adhesions and obstruction and tubal infertility in females coupled with this patients have to stay in hospital and expenditure. The present study aims to review the existing data in the management of Appendicitis conservatively. Studies of Ansaloni, liv study, wilms study, Eriksson and Granstrom, Styruud and studies of varadhan also emphasize upon this point.

### Methodology

A total of 290 patients were diagnosed as Acute appendicitis using clinical methods, biochemical parameters, radiological imaging was done to rule out perforation along with ultrasonography and CT scan.

#### *Inclusion Criteria*

Age 8-60 yrs, left iliac and right iliac fossa pain, Alvorado score of 5-10 and informed consent.

#### *Exclusion Criteria*

Diffuse peritonitis, antibiotic allergy, previous Appendectomy, on going antibiotic therapy, irritable bowel syndrome and pregnancy.

A total of 290 cases of appendicitis was diagnosed from 17 march 2015 to 30 march 2016 out of which 49 cases were treated conservatively amongst which 5 patients under went surgical laparotomy for Appendectomy [4] and abscess drainage [1] and these

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patients presented with sepsis, hypotension, severe pain and shock In MVJ MC & RH the protocol of medical treatment used was

1. Patient was kept nil by mouth for 2-3 days, sips of fluids were allowed from the 3<sup>rd</sup> or 4<sup>th</sup> day.
2. I.V fluids were administered as per the requirement.
3. I.V Metrogyl 100 ml was administered 8<sup>th</sup> hourly for 3 days.
4. I.V Ceftriaxone 1.2 gm twice a day.
5. Inj gentamycin 80 mg twice a day.
6. From the 3<sup>rd</sup> day patients were put on Tab Cefotaxime 200mg twice a day for 8 days along with Tab Metrogyl 400 mg thrice a day for 5 days, oral fluids were started from 3<sup>rd</sup> day onwards.
7. Inj diclofenac 50 mg thrice a day, supplemented with Inj Tramadol 25 mg.

8. Temperature, Pulse, BP recordings were maintained hourly along with abdominal girth chart.

9. Patients who were in sepsis, hypotension, shock and in severe pain with increasing abdominal girth underwent surgical procedure.

#### Statistical Calculation

Will be done by chi squared test with a significance of < 5%.

#### Conclusion

In general patients with acute appendicitis can be treated conservatively in upto 90% cases with continuous monitoring, especially patients on ships, space shuttle, military, pregnant, and should be thought of in undesirable conditions for Surgery.

**Table 1:** Treatment protocol in MVJ MC & RH

|   | Age of patients | Sex          | Leucocytosis  | Medical treatment  | Surgery    |
|---|-----------------|--------------|---|--|------------|
| 1 | 8-20 yrs        | M-3<br>F-2   | + in all patients   | Inj Ceftriaxone 1.2 gm*2 days,   | M-1<br>F-2 |
| 2 | 20-60 yrs       | M-30<br>F-14 | + in 24 patients [M]<br>+ in 10 patients [F]<br>Normal in 10 patients | Inj metrogyl 100 ml 8 <sup>th</sup> hourly*2days<br>Inj gentamycin 80 mg [1-0-1] | M-1<br>F-1 |

**Table 2:** Different studies done and their results

| Author               | Year | n   | Type                                  | Antibiotics  | Extra   | Escape                           | D | Med  | F  | S     | R     |
|----------------------|------|-----|---------------------------------------|--|---|----------------------------------|---|--|----|-------|-------|
| Eriksson & Granstrom | 1995 | 20  | Pilot study                           | Cefotaxime 2g 12 hourly +<br>Tinidazole 0.8g daily               | IV fluids;<br>oral intake 2 <sup>nd</sup> day | No improvement 24 h appendectomy | 2 | Ofloxacin 200 mg 2dd;<br>Tinidazole 500 mg 2 dd        | 10 | 95%   | 37%   |
| Winn et al.          | 2004 | 48  | Treatment based on the Alvarado score | Gentamicin IV 6 mg/kg one dose<br>Metronidazol 1500 mg one doze  | None documented                               | Review in 24 h                   | 1 | Augmentin 875/125mg 2 dd                               | 7  | 92%   | 5%    |
| Styrud et al.        | 2006 | 128 | Prospective RCT                       | Cefotaxime 2g 12 hourly +<br>Tinidazole 0.8g daily               | IV fluids;<br>oral intake 2 <sup>nd</sup> day | No improvement 24 h appendectomy | 2 | Ofloxacin 200 mg 2dd;<br>Tinidazole 500 mg 2 dd        | 10 | 88%   | 15%   |
| Hansson et al.       | 2009 | 106 | Prospective modified RCT              | Cefotaxime 1g 2 dd +<br>Metroindazol 500 mg 1 dd                 | IV fluids;<br>no oral intake                  | Prolonged IV treatment           | 1 | Ciprofloxacin 500 mg 2 dd;<br>Metronidazol 400 mg 3 dd | 10 | 91%   | 14%   |
| Malik & Bari         | 2009 | 40  | Prospective RCT                       | Ciprofloxacin 500mg 12 hourly +<br>Metroindazole 500 mg 8 hourly | IV fluids                                     |                                  | 2 | Ciprofloxacin 500 mg 2 dd;<br>Tiniazole 600mg 2 dd     | 7  | 95%   | 10%   |
| 5 studies            |      | 342 |                                       |  |   |                                  |   |  |    | 90.8% | 15.9% |

Year – publication year;  
 N – number of patients in the antibiotics arm;  
 type – type of study;  
 Antibiotics – choice of antibiotics at admission;  
 Extra – other measures taken during admission;  
 Escape – policy if antibiotics were not successful;  
 D – Discharge, or number of days after which patients were discharged;  
 Med – medication;  
 F – follow-up, number of days the patients were taking antibiotics after discharge;  
 S – rate of successfully treated patients;  
 R – recurrence rate;  
 IV – intravenous;  
 RCT – randomized clinical trial

Alvarado's score indicating the probability of acute appendicitis. The scores are summed, with 0 indicating the lowest probability and 10 the highest probability of acute appendicitis.

| Symptoms                           | Signs score |
|------------------------------------|-------------|
| Migratory right iliac fossa pain   | 2           |
| Nausea/vomiting                    | 1           |
| Tenderness in right iliac fossa    | 2           |
| Rovsing's sign/positive cough sign | 2           |
| Leucocytosis                       | 2           |
| Rectal tenderness                  | 1           |

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