

Antimicrobial Prophylaxis in Acute Appendicitis

AJMAL FAROOQ, MOHAMMAD SHABBIR AHMAD, ASADULLAH MALIK

ABSTRACT

It is a case series of 100 (100%) cases of acute appendicitis comprising 52(52%) males and 48(48%) females without any antibiotics administration. Median age was noted as 29.5 (std±13.5). 83% patients belonged to urban and remaining rural areas. 81% were discharged within 72 hours. 93% of the patients recovered uneventfully. In 2 (2%) patients wound infection were seen and in 5 (5%) stitch abscesses were noticed. We observed no significant difference in terms of postoperative wound infection rate when the results were compared with the results of the studies in which routine prophylactic antibiotics were administered.

Key words: Non-complicated appendicitis Prophylactic antibiotics.

Acute appendicitis is the commonest cause of abdominal pain requiring surgical treatment. Seven percent of the population requires appendicectomy in their lifetime¹. BURKE and POLK evolved the principles of administering prophylactic antibiotics about half century back^{2,3}. Since then, some authors are convinced that prophylactic antibiotics are useful in preventing postoperative septic complications in uncomplicated appendicitis while others conclude that it is highly questionable⁴. Acute appendicitis, if uncomplicated, is a resectable infection and inappropriate use of antibiotics increase cost, side effects and resistance of otherwise sensitive organisms⁵. The purpose of this study was to evaluate the role of antibiotics in non-complicated appendicitis. (NCA)

PATIENTS AND METHODS

This is an observational analyses of a series conducted at services and Lahore general hospital Lahore in 2004-2006. All patients presented in surgical emergency and diagnosed as a case of acute appendicitis were included into the study. No antibiotic, preoperatively, peroperatively or postoperatively were administered. The patients found to have gangrenous or perforated appendix were excluded from the study and so were the cases of appendicular masses. History, clinical examination, results of investigations, preoperative findings, preoperative findings and postoperative follow up were entered into a Performa, the results compiled and analyzed by statistician.

RESULTS

In this study 100 (100%) cases: 52 (52%) males and 48 (48%) females (Figure-1), with age ranging from 11-75 years were included. M: F ratio 1: 1.08 and

Department of Surgery, Lahore General Hospital, Lahore
Correspondence to Dr. Ajmal Farooq, Assistant Professor,
Tel. 0333-4285025
Received June 29, 2007; accepted September 18, 2007

Median age was 29.5(std ±1.5). Most of the patients 59% were aged 11-30 years

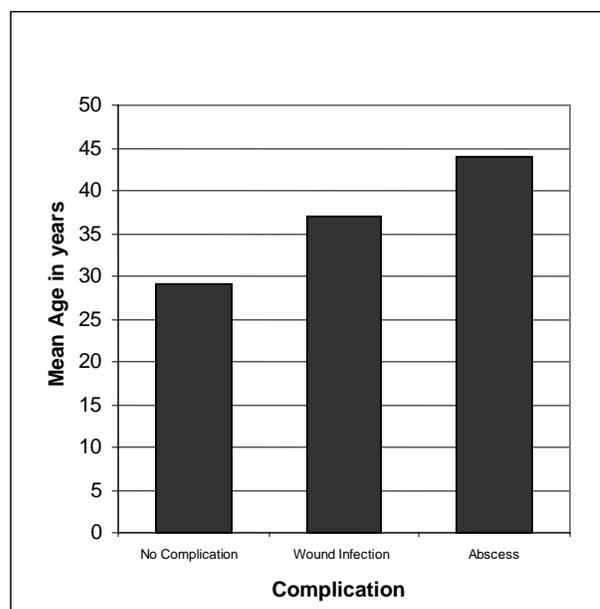


Fig. 1: Age wise complications

83% patients belonged to urban and remaining (17%) to rural areas. Post operative hospital stay in 81% of cases were 72 hours.

In 93% (n=93) of patients the postoperative recovery was uneventful. Stitch abscess were noticed in 5% (n=5) of patients that were treated with dressings only and in none of the patients antibiotics were required. In 2% (n=2) of the cases wound infection were observed, that was treated with dressings and oral antibiotics.

The rate of complications increased with increasing age. The complication rate was nil at the mean age of 28.77(std 13.04), 2% wound infections were noted at the mean age of 37 (std: 32.5) and 5% stitch abscesses were observed at the mean age of 44(std 9.03). (Fig. 1)

No abdominal abscess formation or mortality noted.

DISCUSSION

People like HIPOCRATES to MOSES Mamonies probably did not know the disease⁶. This was Reginald's Fits in 1886 that coined the term appendicitis for the first time⁷. Charles Mcburny and other surgeons advocated prompt clinical diagnoses and early intervention in twentieth century⁸.

Most of the patients 59% (n=59) in this series have ages between 11-30 years that is according to the text. (Schwartz).

The age ranges from 11-75 years that is comparable with studies by Faisal et al in 2001⁹ and M. Yahya et al in 1993¹⁰ in which they described a range of 5-80 years. Male to Female ratio 1:1.08 again signifies the female preponderance and is consistent with the fact that appendicectomies are performed more in females than males¹¹. M; F ratio depicted by GM Arian¹² and et al in their study of 56 patients at FJMC in 2001 is 1; 1.3 which is again comparable to our study.

The mortality rate was 40% in acute appendicitis before antibiotics era that was decreased to 2.4% in 1940¹³. Since then some of the authors believe in effectiveness of antibiotics to reduce the infective complications of appendicectomy for non perforated appendicitis. Others conclude that the role of prophylactic antibiotics in non-complicated appendicitis is questionable³. Workers like Busutti et al in 1981¹⁴, Brouder et al in 1989¹⁵ and Shubing et al in 1995¹⁶ during their studies on non complicated appendicitis with prophylactic antibiotics described the wound infection rates up to 11.7%. In a similar study of 500 cases by Likman mui in 2004¹⁷ noticed wound infection rate of 6.5% and 6.4%, instead of administering one and two doses of prophylactic antibiotics, respectively.

The wound infection rates of 6.4% and, 6.5% noticed by these workers are comparable to our study (7%) Marten Tonz et al in 2000¹⁸ in their retrospective study of 251 cases of NPA without prophylactic antibiotics, they described even a better figure of 4.2%. Wojciech et al¹⁹ in their double blind randomized controlled trials mentioned a figure of 4.2% in NCA without antibiotics. Page et al in 1993 depicted a similar value (4-9%) in their study that is again comparable to our series.

Strikingly the peoples like Busutti L (1981), Brouder (1989), Shubing (1995) and Likmann mui (2004) who worked on NCA with antibiotics showed higher post operative wound infection rates than workers like Martin tones (2000) and Wojciech who did not administered antibiotics in NCA. The results

of our series are comparable to these international studies.

National research council (NRC) has classified the surgical wounds as clean, clean contaminated and contaminated with infection rates of 2%, 10% and 20% respectively²⁰. Even with prophylactic antibiotics²¹. The results of our study and that of studies by others, under discussion, pose a question whether the classification of surgical wounds by NRC does fully address the predictive factors that play a role in post operative wound infection like Obesity, Age, Length of surgical procedure, Experience of operator and many other co-morbid factors?

It is, therefore, suggested that better designed studies may be initiated to recommend whether the older classifications in this regard needs to be revised?.

CONCLUSION

We concluded that role of prophylactic antibiotics in non-complicated appendicitis is not convincing and needs to be re evaluated.

REFERENCES

1. Schwartz SI Appendix. In: Emerg Med Clin; North Am 1996; 14; 653-71.
2. Burke JF; The effective period of preventive antibiotic action in experimental incisions and dermal lesions; surgery 1961; 50; 161-168.
3. Polk. JR; Lopez. Mayar JF; Postoperative wound infection-A study of detrimental factors and prevention surgery; 1969; 66; 97-103.
4. Kisilcanf; Tayneil FC; Heisonies R; the necessity of prophylactic antibiotics in non complicated appendicitis in childhood. J; Paed. S; 1992; 27; 586-588.
5. Page CP; Bohnen JMA; Fletcher JR; Antimicrobial prophylaxes for surgical wounds. Guidelines for clinical are. arch. surg. 1993; 128; 79-80.
6. Walker AR; Segal I; what causes appendix? J; Clin; Gastroent; 1990; 12; 127-129
7. Fitz RH; Perforating Inflammation Of Vermiform appendix; trans. assoc. am; phys; 1886; 1; 107-144.
8. Mcburney C; Experience with early operative interference in cases of the vermiform appendix; Ny Med J 1889; 50: 676-84.
9. Faisal Bhopal, SH. Bakhtiar Ahmad, Maanzoor Ahmad, Hamid Hasan, Muqmmad Iqbal. Role of TLC and c reactive protein in the diagnoses of acute appendicitis. JCPSP. Mohammad Yahya; Saad Saif; Ahmd Ibrhim; Saeed abu-eshy et al. A Topical ampicillin for prophylaxes against wound

- infection in acute appendicitis. *Ann. of Saudi med* 1994; 14 (3): 233-36.
10. Andersen B, Bendsten A, Holbraad L, Schant A. Wound Infection After Appendicectomy. *Acta Chir Scand*, 1972;138:531-536
 11. GM Arain, KM Sohue. W Haider, S A Naqi. Role of Alvarado score in diagnoses of cute appendicitis. *Pak. J. Surg* 2001; Vol.17, No. 33: 41-43.
 12. Maxwell JM; Ragilnd JR; Appendicitis improvement in diagnosis ann treatment ; *Am. Surg*, 1991; 57:282-284.
 13. Busutil RW; Davidson RK; Morjore F; Tompkins RK; Effect of prophylactic antibiotics in non perforated acute appendicitis *Ann. Surg* 1981; 194: 502-509
 14. Brouder W; Smith JW; Vivoda LM; Non Perforated Appendix: A Continuous Dilemma. *J; Inf; Dis*;1989,159:1088-94.
 15. Shubing W; Litian Z. Preventing Infection of Incision After Appendicectomy By Using Metronidazole Infiltration In Tissue. *Am;J;Surg*;1997;174;422-4.
 16. Likmann Mui, Clvin SH, Simon KH, Wong, Yuk-hoi et al. Optimum duration of prophylactic antibiotics in acute non-perforated appendicitis. *ANZ J Surg*, 2005. 75; 425-428.
 17. Marten Tones; Philips Schmid; George Kaiser; Antibiotic prophylaxes for appendectomy. a critical appraisal. *World J .of Surg*; 24,995-998. Vol.17/no.33jul.sep2001.41-43.
 18. Wojciech j. Gorecki, Jan A. Grochowski. Are antibiotics necessary in non-perforated appendicitis in children? A double blind randomized controlled trial. *Med. Sci. Monit*; 7(2); 289-292.
 19. National academy of sciences. National Research Council Division of Medical sciences Ad hoc committee on trauma; post operative wound infection, the influence of ultra violet irradiation on the operation room and of various other factors. *Arch; Surg*; 160 (suppl 2) 1; 1964.
 20. Crues P; Foord R; The epidemiology of wound infection; a 10 years prospective study on 62939 wounds; *Surg Clin. of North Am.* 60; 27; 1980.