

# South Africa needs to reject the concept of antibiotics as the primary treatment of acute uncomplicated appendicitis

VY Kong,<sup>1,2</sup>  DL Clarke<sup>2,3</sup> 

<sup>1</sup> Department of Surgery, University of Auckland, New Zealand

<sup>2</sup> Department of Surgery, University of KwaZulu-Natal, South Africa

<sup>3</sup> Department of Surgery, University of the Witwatersrand, South Africa

Corresponding author, email: victorywkong@yahoo.com

The movement in the high-income countries of the world away from surgery as the mainstay of treatment for acute uncomplicated appendicitis, has been well documented and is supported both in the literature and by several prominent surgical societies, in both North America and Europe.<sup>1,2</sup> The proponents of this approach point to the cost savings associated with reduced use of operating theatres and laparoscopic equipment, as well as the prevention of long-term morbidity such as port site hernias and abdominal adhesions.<sup>1,2</sup> They also point to the use of antibiotics as first-line therapy in other abdominal emergencies such as acute diverticulitis. In acute diverticulitis antibiotic therapy may abort acute low-grade inflammation and help avoid surgery, which traditionally involves a morbid stoma. The proponents of non-operative management of acute uncomplicated appendicitis point to the many benefits of this approach. The recent Comparison of Antibiotic Drugs and Appendectomy (CODA) trial which randomised 1 552 adult patients with acute uncomplicated appendicitis, to either laparoscopic appendectomy or antibiotic therapy, concluded that antibiotics were non-inferior to appendectomy based on results of a standard health-status measure. It should be noted that in the antibiotics group, nearly 3 out of every 10 participants had subsequently undergone an appendectomy by 90 days. Also of note is that patients with an appendicolith were at a higher risk for delayed appendectomy and complications than those without an appendicolith.<sup>1,2</sup> The authors went on to state that in the antibiotics group, more than 7 in 10 participants avoided surgery, were treated mostly as outpatients and subsequently missed fewer days at work.

Whilst it seems, superficially, to make sense to want to reduce the need for and incidence of an operative procedure, the South African context must be taken into account. We have written extensively about the outcome of acute appendicitis in rural South Africa. The disease South African surgeons confront bears scant similarity to that managed by the authors of the CODA study.<sup>1,2</sup> Essentially acute appendicitis in the developing world represents massive "health systems failure" with delayed recognition and delayed definitive

treatment being the norm.<sup>3-6</sup> This translates into high rates of open surgery with significant morbidity and even mortality. Rural patients remote from regional and tertiary hospitals have a worse disease profile and worse outcomes.<sup>3-6</sup> The issue is one of recognition of disease rather than of treatment protocols. Despite efforts to improve surgical care in the rural hinterland of the country, surgical capacity at district hospitals seems to have deteriorated rather than improved over the last three decades. There is little sign of this situation changing.<sup>7,8</sup> Even laparoscopic approaches to acute appendicitis are limited by the advanced stage of disease confronted in the state sector institutions.

The situation in private practice is different in terms of the stage of disease seen.<sup>9,10</sup> However, the issue in private practice is the nature of the system of care. Busy sole surgical practitioners, without the support of house staff and trainees to help review and regularly reassess patients, are more likely to opt for a definitive low risk surgical solution, than an approach that requires repeated observation and reassessment. It is difficult to convince patients that a prolonged course of antibiotics, entailing fairly strict follow-up, is a better option than a relatively short and uncomplicated definitive operation. The fact that thirty per cent of patients go on to need an appendectomy at some point in the future, suggests that antibiotic therapy is simply delaying the inevitable.<sup>1,2</sup> Unlike the situation in acute diverticulitis, where the acute surgery frequently involves a stoma and may involve repeat surgery, laparoscopic appendectomy is relatively safe and well tolerated. We are not comparing like with like, by pointing to acute diverticulitis and that argument is a non sequitur.

There are other concerns with a non-operative approach. These include the spectre of delayed recognition of an appendicular malignant lesion with an observation and antibiotic only strategy. The suggestion that patients who successfully complete non-operative therapy for acute appendicitis should undergo delayed or interval appendectomy is difficult to appreciate. It seems as if the proponents of such a strategy are trying to have their cake and eat it too. It is difficult to see any advantage in delaying

an appendectomy for a few weeks or months. As such, we find that we cannot support the suggestion that antibiotic therapy for acute uncomplicated appendicitis be rolled out in the South African context.

### ORCID

VY Kong  <https://orcid.org/0000-0003-2291-2572>

DL Clarke  <https://orcid.org/0000-0002-8467-1455>

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