

A Survey of Perioperative Antibiotic Prophylaxis for Colorectal Surgery in the Kingdom Of Bahrain

M. Abdulrahman¹, R. Abdulrahman¹, F.O. Cunningham^{1*}

¹Royal College of Surgeons in Ireland Bahrain

Received: 11 June, 2017; Accepted: 25 September, 2017; Published: 12 October, 2017

*Corresponding author: F.O. Cunningham, Royal College of Surgeons in Ireland medical University of Bahrain P.O. Box 15503 Adliya Bahrain, Fax no: 0097317322045, Phone No: 0097334581912; E-mail: fcunningham@rcsi-mub.com

Abstract

This study looked at the Perioperative Antibiotic Prophylaxis (PAP) practice among 22 colorectal surgeons in Bahrain by way of a hand delivered questionnaire. Fourteen surgeons completed responses. For PAP, all fourteen used intravenous (IV) antibiotics in combination with mechanical bowel cleansing. Four (28.5%) used combined oral and IV PAP. One used IV antibiotics only. None used oral PAP alone nor used oral PAP combined with mechanical cleansing. Ten (71%) stated their PAP method was inherited from their training and was not evidence based. Seven (50%) said that they were open to changing their PAP methods after reading an evidence based review.

Introduction

Colorectal surgery carries a high risk of surgical site infection which varies from 9.4 to 15.7 per cent by laparoscopic or open techniques respectively [1].

The evolution from sole mechanical bowel preparation to Perioperative Antibiotic Prophylaxis (PAP), given orally or intravenously (IV), was reviewed by Zelhart et al.[2] (Figure 1).

They concluded that a combination of oral and IV PAP was superior to IV alone in colorectal surgery. However, to date, there is no consensus on the best practice, and therefore there is no standard to follow.

Objectives

The objective of this study was to determine the preferred methods of bowel preparation and antibiotic prophylaxis used in elective colorectal surgery by surgeons in the Kingdom of Bahrain, and what guidelines they used for PAP. We questioned if they were willing to change their practice after reading the evidence based review of PAP by Zelhart [2].

Methods

A survey by questionnaire was first distributed by email to 22 surgeons performing elective colorectal procedures in Bahrain enquiring about their PAP and bowel preparation methods for colorectal surgery. None responded to the e-mail request, so we proceeded to visit the surgeons by appointment in their

clinics. Fourteen surgeons were handed packages that had three documents which consisted of: (1) a consent form which guaranteed privacy and confidentiality, (2) a copy of the article by Zelhart et al. on Pre-operative Antibiotic Colon Preparation, which recommended oral antibiotics the day before surgery in addition to IV antibiotics, and (3) a printed version of the questionnaire. Figure 2. This included questions on mechanical bowel cleansing, the use of oral and IV antibiotics, whether alone or in combination. It also asked whether their preferred methods were evidence-based, inherited in training or were based on hospital policy. They were then asked if reading the article review by Zelhart et al. would change their practice.

Results

A total of fourteen surgeons completed and returned the survey. The final results showed that 100% (14\14) of the surgeons used IV prophylaxis in their perioperative preparation. 64% (9\14) of which were in combination with mechanical cleansing only, while 28.5% (4\14) of the surgeons' added oral to the combination, and 1 surgeon stated that he uses IV prophylaxis alone (Figure 3).

None of the participants used oral prophylaxis on its own, nor oral prophylaxis in combination with mechanical cleansing.

When asked whether their methods are evidence based or inherited in training, 71% (10\14) stated that they were inherited in training. And when asked whether they are open to changing their methods after reading the supplied literature, only 50% (7\14) agreed to do so (Figure 4).

When asked whether their hospitals have guidelines/policies for perioperative preparation for colon surgery, 50% (7\14) said yes.

Discussion

The evolution of preparation for bowel surgery from sole mechanical bowel preparation in the mid-twentieth century, to the addition of oral antibiotics, culminating in IV antibiotics alone in the new millennium is outlined in the literature review by Zelhart et al. [2]. They note that IV prophylaxis is the current

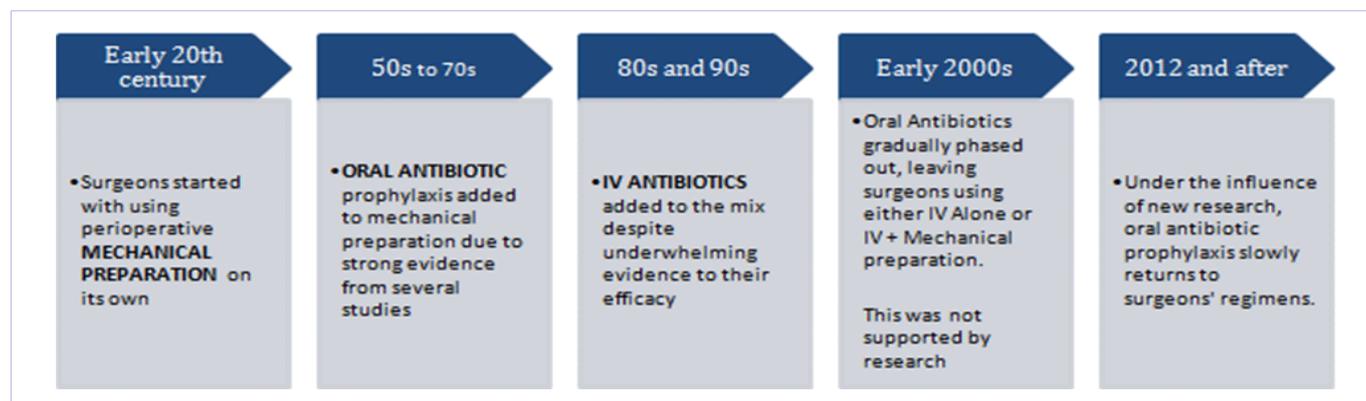


Figure 1: The evolution of perioperative preparation for colorectal surgery according to Zelhart et al[2].

Questionnaire

	Yes	No	Notes
1. Mechanical bowel preparation used.			
2. Mechanical Bowel preparation plus oral antibiotics.			
3. Mechanical bowel preparation plus oral antibiotics plus IV Antibiotics used.			
4. IV antibiotics only used.			
5. Oral and IV antibiotics used.			
6. No oral antibiotics used.			
7. Specific antibiotic regimen used.			
How many doses?			
8. Is your antibiotic regimen evidence based such as Cochrane?			
Or historically inherited in training			
9. Is there a Hospital policy on pre-op. antibiotic colon preparation?			
What is it?			
10. Have you read the review by Zelhart et al?			
11. Would it influence your practice?			

Figure 2: The questionnaire provided to the surgeons

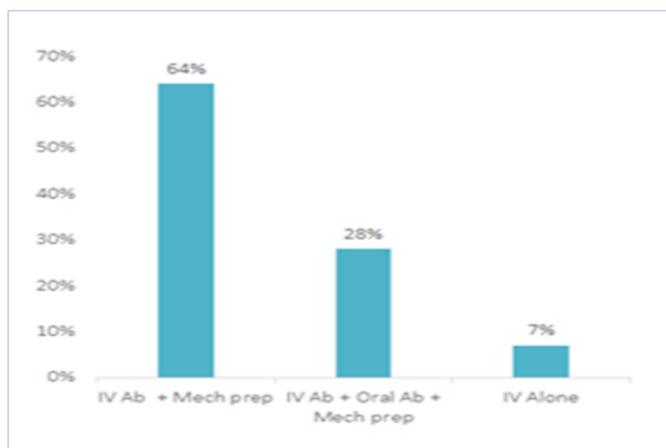


Figure 3:

prevalent method for PAP against infection in bowel surgery. They conclude that this is not the most effective method, and that oral antibiotic prophylaxis and mechanical cleansing are enough to produce the lowest infection rates. The addition of IV antibiotics to the latter is also acceptable to them.

Conclusions

The results of our survey confirm the findings of the literature review by Zelhart [2]. They show that the majority of surgeons opt for IV prophylaxis alone, while less than a third allow oral antibiotics into their regimens, but only as an addition to parenteral antibiotics. None of the surgeons used oral antibiotics on their own.

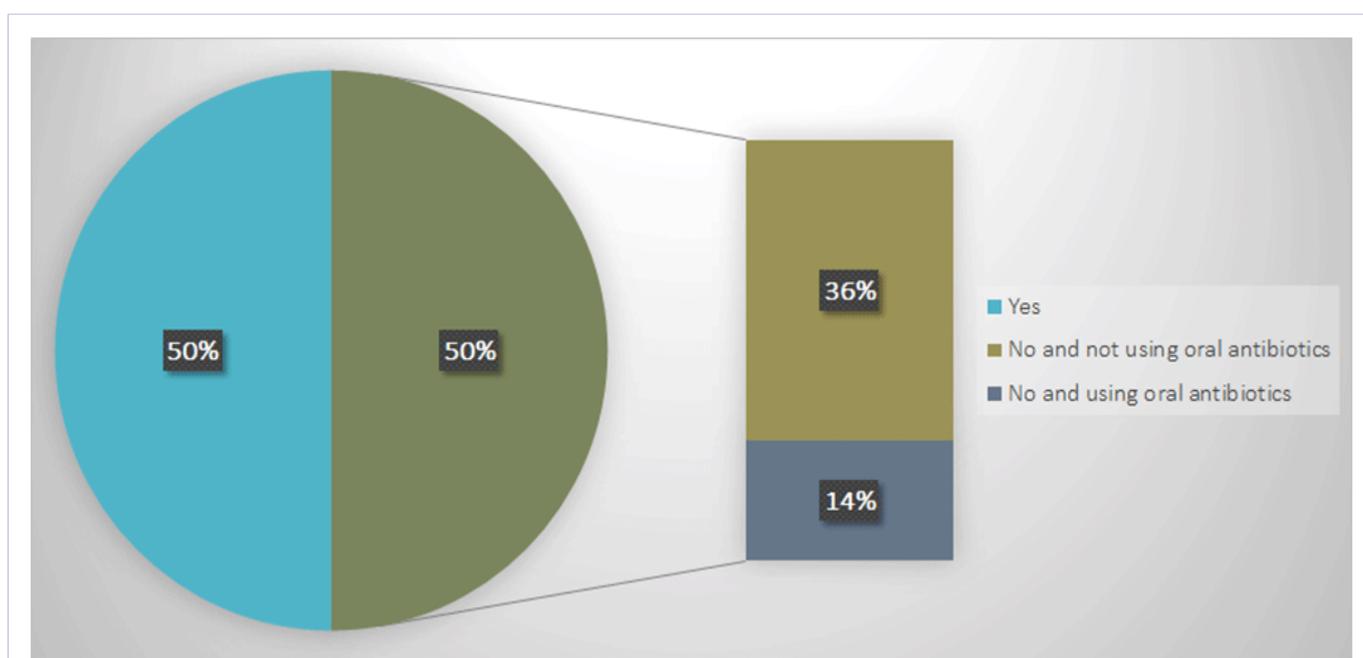


Figure 4 :

We conclude that more than two thirds of the participants were using PAP methods that were not evidence based and continued to use methods imprinted in their training. Half of those surgeons also stated that although they were aware of not using an evidence based method, they were unwilling to change their practice based on the supplied literature review.

References

1. Aimaq R, Akopian G, Kaufman HS. Surgical site infection rates in laparoscopic versus open colorectal surgery. *The American surgeon*. 2011;77(10):1290-1294.
2. Zelhart M, Hauch A, Slakey D, Nichols R. Preoperative Antibiotic Colon Preparation: Have We Had the Answer All Along?. *Journal of the American College of Surgeons*. 2014;219(5):1070-1077.