

# Systematic review on the treatment of ischaemic colitis

Diaz-Nieto, Rafael, Colorectal Disease 13(7):744-7 · February 2010

## Abstract

Ischaemic colitis is uncommon. Aetiological factors include abdominal aortic surgery, drugs (especially inotropics) or rheumatoid diseases, such as Takayasu's or Buerger's diseases. However, there is often no triggering factor, and it may be part of multifactorial cardiac, respiratory, renal or metabolic failure. A systematic review of the current literature on the management of ischaemic colitis was carried out. Ten retrospective trials (841 patients) were included. No randomized controlled or prospective trial of the management of ischaemic colitis was found. There is very little evidence base for the management of this condition.

### ABSTRACT:

**Aim:** ischaemic colitis is uncommon. Aetiological factors include abdominal aortic surgery, drugs (especially inotropics) or rheumatoid diseases like Takayasu's or Buerger's diseases. However there is often no triggering factor and it may be part of multifactorial cardiac, respiratory, renal or metabolic failure.

**Method:** A systematic review of the current literature on the management of ischaemic colitis was carried out.

**Conclusion:** There is very little evidence base for the management of this condition.

**Key words:** ischaemic colitis, management, systematic review.

## INTRODUCTION:

Ischaemic colitis is uncommon. Although some pathological and anatomic considerations explain the perfusion deficit (1, 2), the underlying aetiology is still unclear. The condition has an incidence of 4.5-9.9 per 100000 population / year although some studies report it to be up to 44 per 100000/ year. It seems to be more frequent in women (58 vs 32 / 100 000) (3) and is related to age, being zero for individuals in their forties but 119 /100 000 per year in patients aged over 65 years. Several risk factors have been described. These include age, chronic obstructive pulmonary disease where the incidence can reach up to 157 cases per 100000 person per year in women and inflammatory bowel disease with an incidence rate of 46/30 per 100000/.females/males per year (4). Constipation has also been suggested as a potential risk factor (5), with added effect due to the medication used to treat it (6). Several cases have been reported in association with alosetron use (7). Non-steroid anti-inflammatory drugs have been described to have a possible protective effect (8). Some cases have been reported in patients with rheumatoid diseases such as lupus erithematosus and Takayasu's and Buerger's diseases (9-11). In addition a high rate of ischaemic colitis has been reported after vascular surgery (12, 13), where it is often missed due to lack of clinical suspicion.

The clinical presentation is variable. The most common symptoms are abdominal pain and bloody stools (14). The severity of pain varies from moderate to severe in a shocked patient with an acute abdomen. Patients with chronic vascular insufficiency may present with symptoms related to chronic mesenteric ischemia including postprandial abdominal pain and weight loss. Various blood tests may help in the diagnosis. Anaemia, or electrolyte imbalance can be the reason for decompensation of

patients with chronic cardiac or renal failure. Metabolic acidosis from lactate production is highly indicative but is not specific (15).

Arteriography has always been considered the gold standard technique for vascular bowel disorders, especially in the diagnosis of chronic and acute mesenteric ischemia (2). It may also be used for the treatment of acute mesenteric ischaemia where thrombolysis can be performed (16). Arteriography for ischemic colitis is not well described and this review has not identified studies that use it routinely. It is recommended in cases of doubt but there are authors that consider that in ischaemic colitis the blood flow has returned to normal at the time of the onset of symptoms (14). Doppler ultrasonography is increasingly used for vascular assessment within the abdomen. A Japanese study has demonstrated its value in diagnosis, where it was also useful in the differential diagnosis of inflammatory bowel disease (17) and in the identification of those patients with a bad prognosis or risk of significant deterioration (18). The best results are described when the main aortic branches such as the coeliac trunk and superior mesenteric artery are assessed, but both are commonly not affected in cases of ischemic colitis.

Barium enema examination has commonly been used for diagnosis and may show the typical finding of “thumb printing” due to mucosal oedema. One series has described it to have a sensitivity of up to 80% (19) but it should not be performed where there is a suspicion of gangrene, perforation, or peritonitis (15). Computerised tomography (CT) will show thumb printing, bowel wall thickening, loss of haustrae and gas in the wall of the bowel or portal system in infarction (20). These signs may, however, be shared with others diseases such as acute severe inflammatory bowel disease or diverticulitis. Intravenous contrast administration when not contraindicated (for example in patients with renal failure) can detect acute mesenteric ischaemia with sensitivity rates over 90% (2) although it cannot predict the development of complications (21). Finally the diagnosis should be confirmed histopathologically by biopsies taken during colonoscopy. While this may be inadvisable when the bowel wall is necrotic, there are several studies which conclude that early endoscopy is essential for accurate diagnosis (22). The study aimed to review the literature related to ischaemic colitis in an attempt to determine the best diagnostic and therapeutic strategy.

## METHOD

A systematic review was conducted of the literature in English and Spanish from 1980 to 2008. The sources of information included Cochrane, Medline and Embase databases. The following MeSH terms were used in the searches: “ischemic colitis”, “colon ischemia”, “ischemic colitis and management”.

Three thousand two hundred and thirty one {3,231} papers related to this topic were identified, of which 1,041 were duplicates. We excluded case reports, experimental trials and publications related to ischaemic colitis as a result of direct injury to the colonic blood flow due to any vascular procedure. Acute mesenteric ischaemia, chemical colitis, granulomatous colitis, pseudomembranous colitis, amoebic colitis, ulcerative colitis and inflammatory bowel disease were also excluded. No randomized controlled or prospective trial of the management was found. There were only ten retrospective studies which gave special consideration to the management (Table 1) (23-32). These showed a low level of evidence indicating the need for prospective trials to determine the best treatment.

## RESULTS:

Of the 10 articles cited in Table 1 none compared different treatments and all were descriptive and retrospective. They included 841 patients with the majority being female. Despite this being a

pathology related to the elderly, several series have reported the condition in young adults (29). There was some consensus regarding management. All the articles agree that surgery is indicated for patients with signs of peritonitis or who are haemodynamically unstable while less acute cases should be managed conservatively. In the only study in which conservative treatment was performed for all patients, there was a high failure rate (27).

Non surgical treatment included total parenteral nutrition (TPN) and bowel rest, intravenous water and electrolyte administration and antibiotics. There were, however, no standard protocols. Surgical approaches consisted of laparotomy with segmental resection and total colectomy with an anastomosis or stoma depending on intraoperative findings.

The analysis of the available data shows an overall mortality of 22% with a range from 6% to 53%, including 0% in some cases having conservative management and up to 75% (32) in cases with pancolitis requiring surgery with a mean mortality of 30%. Failure of non-surgical management includes death, non improvement and the need for surgery, thus the mortality of conservative treatment may be higher and the mortality of surgery lower. Failure of conservative group can be up to 65% (27). The conclusion of all articles is that surgery is indicated only for patients with clear signs of peritonitis or failure of conservative management. All authors agree that the most important aim is to identify possible risk factors which predict failure of a non surgical approach.

## **DISCUSSION:**

There is a paucity of information on the appropriate management of ischaemic colitis. Several attempts have been made to identify risk or prognostic factors to prevent deterioration of patients with ischaemic colitis, but there is no evidence as to what is the best treatment. There is no doubt that in peritonitis, surgery is indicated if the patient is fit enough. However the role of surgery in less acute cases has yet to be defined. Surgery is associated with a high mortality, but this is likely to be related to the poor condition of the patient who often has serious comorbidity. Similarly the role of conservative treatment has not been defined, following resuscitation.. There is no objective evidence for the value of antibiotics, bowel rest, intravenous water and electrolytes and total parenteral nutrition over enteral feeding (33). No articles mention the use of heparin, dicouramin anticoagulants or antiplatelet therapy. Only a prospective trial can answer this question. The successful endovascular management of segmental colonic ischaemia has been described (16) and it may be that this type of technique will open up new therapeutic possibilities.

In conclusion there is a lack of information on the management of ischaemic colitis. Only surgery in peritonitis seems to be generally agreed. Conservative treatment for the remaining cases is used and the role of surgery in this group of patients is not defined.

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TABLE 1 :

included trials and results summary:

Table legend:

\*These 8 patient were recommended surgery but refused and died.

\*\*22% mortality for segmental ischemic colitis + 75% mortality for ischemic pancolitis.

\*\*\*8 deaths in the 13 initial surgical patients and 6 deaths in the 20 patients where conservative treatment failed.

\*\*\*\*Failure of conservative treatment includes surgery, and mortality.

\*\*\*\*\*All patients in this series were treated surgically, 56 in the first 24 hours. The authors do not report if the other 32 were treated surgically due to fail are of conservative treatment.

N: number of patients.

NR: not reported.

{IschemicTab01.png}

Ref:

[https://www.researchgate.net/publication/43072249\\_Systematic\\_review\\_on\\_the\\_treatment\\_of\\_ischaemic\\_colitis](https://www.researchgate.net/publication/43072249_Systematic_review_on_the_treatment_of_ischaemic_colitis)