Draft Key Questions

Key Question 1: What are the benefits and harms of CT imaging for the initial diagnosis of acute diverticulitis compared to other imaging modalities?
   a. Do the benefits and harms vary by patient characteristics or presentation of illness?

Key Question 2: What are the effectiveness/harms of antibiotics for the treatment of acute diverticulitis?
   a. What are the effectiveness/harms of antibiotics for the treatment of acute uncomplicated diverticulitis?
   b. What are the effectiveness/harms of antibiotics for the treatment of acute complicated diverticulitis?
   c. Do the effectiveness/harms vary by route of administration of antibiotic, type of antibiotic, duration of course of antibiotic?
   d. Do the effectiveness/harms vary by other patient characteristics or presentation of illness?

Key Question 3: What are the comparative effectiveness/harms of antibiotics for the treatment of acute diverticulitis?
   a. Do the comparative effectiveness/harms vary by patient characteristics or presentation of illness?

Key Question 4: What are the benefits and harms of distant colonoscopy following an episode of acute diverticulitis?
   a. Do the benefits and harms vary by patient characteristics or presentation/course of illness?

Key Question 5: What are the effectiveness and harms of pharmacological (e.g., mesalamine, etc.) and non-pharmacologic (e.g., dietary advice) interventions to prevent recurrent diverticulitis?
   a. Do the effectiveness and harms vary by patient characteristics or presentation/course of illness?

Key Question 6: What are the comparative benefits and harms of the various treatments for recurrent diverticulitis?
   a. What are the comparative benefits/harms of the various treatments for recurrent uncomplicated diverticulitis?
b. What are the comparative benefits/harms of the various treatments for recurrent complicated diverticulitis?

c. Do the comparative benefits and harms vary by patient characteristics or presentation/course of illness?

Background

Colonic diverticulosis is a common condition in Western countries with prevalence rates that exponentially increases with age.\(^1\) Under the age of 30, only 1-2% of patients have diverticulosis but by 80 years of age the prevalence increases to 50-66%.\(^2,3\) About 10-25% of patients with diverticulosis will develop inflammation leading to a condition termed acute diverticulitis.\(^4\) Acute diverticulitis can be subdivided into uncomplicated and complicated categories. In their lifetime, approximately 15–20% of individuals with diverticulosis will develop acute complicated diverticulitis (ACD).\(^5\) As opposed to uncomplicated diverticulitis, ACD is characterized by the presence of phlegmon, abscess, or perforation.\(^6\) Recurrent episodes of ACD can lead to late complications such as stenosis or fistula.\(^7\)

Recently, there has been a substantial increase in incidence rates of both complicated and uncomplicated diverticulitis as well as a considerable rise in number of hospital admissions. This has led to a significant cost burden of up to $2.4 billion annually in the United States attributable to diverticulitis complications alone.\(^8,9\)

In recent years, several controversies have emerged with regards to the optimal management of acute diverticulitis.\(^10\) Whether antibiotics are truly necessary for treatment of acute uncomplicated diverticulitis has been recently questioned.\(^11\) Due to unfavorable mortality and complication rates for emergent surgery for ACD, physicians have opted to delay definitive surgical management by employing antibiotics and interventional radiology procedures such as percutaneous drainage of abscess in appropriate patients. Surgical approaches have also evolved from Hartmann’s procedure to primary anastomosis with protective stoma or even laparoscopic lavage and drainage for diverticulitis complicated by perforations with purulent or feculent peritonitis.\(^12\) Other areas of controversy include selection of the optimal imaging modality to diagnose uncomplicated and complicated diverticulitis as well as appropriateness of performing distal colonoscopy following a resolved episode of diverticulitis to detect occult colonic malignancy.\(^13,14\) In addition, pharmacologic and non-pharmacologic measures such as 5-aminosalicylates and dietary modification, respectively, to prevent recurrent diverticulitis have been of recent interest for physicians.\(^15,16\)
Figure 1. Draft analytic framework for Key Question 1

- CT Scan
- MRI
- Other imaging modality

Adults with suspected diverticulitis (KQ1)

Healthy events (KQ1)

Health outcomes
- Diagnostic accuracy for acute uncomplicated and complicated diverticulitis

Figure 2. Draft analytic framework for Key Questions 2 & 3

- Antibiotics (oral/parenteral/other route; type; duration of treatment)
- No antibiotics, clear liquid diet only

Adults with acute uncomplicated or complicated diverticulitis (KQ2 & KQ3)

Healthy events (KQ2 & KQ3)

Health outcomes
- Resolution of diverticulitis
- Recurrent diverticulitis
- Avoidance of surgery
- Morbidity
- Mortality
Figure 3. Draft analytic framework for Key Question 4

- Colonoscopy

Adults with resolved episode of diverticulitis

(KQ4)

Health outcomes
- Occult colorectal cancer
- Recurrent diverticulitis

Adverse events

Figure 4. Draft analytic framework for Key Question 5

- Drug (5-aminosalicylates, etc.)
- Non-drug (dietary modification, etc.)

Adults with history of diverticulitis

(KQ5)

Health outcomes
- Recurrent diverticulitis (prevention)

Adverse events
Adults with recurrent diverticulitis (complicated or uncomplicated)

(KQ6)

Adverse events

(KQ6)

Health outcomes
- Resolution of diverticulitis
- Morbidity
- Mortality

• Laparoscopic lavage and drainage
• Percutaneous drainage (interventional radiology)
• Surgical resection with primary anastomosis
• Hartmann’s procedure
• Antibiotics only

Resolution of diverticulitis
Morbidity
Mortality
### Table 1. Key Questions and PICOTS

<table>
<thead>
<tr>
<th>KQ1: Diagnostic imaging</th>
<th>KQ2 &amp; KQ3: Antibiotics</th>
<th>KQ4: Follow-up colonoscopy</th>
<th>KQ5: Prevention of recurrence</th>
<th>KQ6: Surgical and interventional treatments</th>
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<tr>
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<td>Adults with suspected</td>
<td>Adults with diverticulitis (uncomplicated or complicated)</td>
<td>Adults with resolved episode of ACD</td>
<td>Adults with history of diverticulitis</td>
<td>Adults with recurrent diverticulitis (complicated or uncomplicated)</td>
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<td>Colonoscopy</td>
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Abbreviations: KQ=Key Questions; ACD=Acute Complicated Diverticulitis; MRI=Magnetic Resonance Imaging; CT=Computed Tomography
References


