Acute Diverticulitis: Can We Prevent It, How Best to Treat It, & Can We Decrease Its Recurrence?
Diverticular Disease

Any illness that occurs as a result of colonic diverticula
Diverticulitis

Inflammation or infection of colonic diverticula
Diverticulitis

Uncomplicated vs Complicated
Diverticular hemorrhage

Arterial hemorrhage in a colonic diverticulum
SCAD
Segmental colitis associated with diverticulosis
SUDD
Symptomatic uncomplicated diverticular disease
Taxonomy of diverticular disease

- Diverticular disease (10-35%)
  - Diverticulitis (10-15%)
    - Acute diverticulitis (65-80%)
    - Chronic diverticulitis (20-35%)
      - Chronic recurrent diverticulitis (80-90%)
  - SUDD: Symptomatic uncomplicated diverticular disease (85-90%)
- Asymptomatic diverticulosis (65-90%)
  - SCAD: Segmental colitis associated with diverticula (10-20%)
Taxonomy of diverticular disease

- Diverticulosis (10-25%)
  - Diverticular disease (10-35%)
    - Diverticulitis (10-15%)
      - Acute diverticulitis (65-80%)
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  - Asymptomatic diverticulosis (65-90%)
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      - Chronic recurrent diverticulitis (80-90%)
    - SCAD: Segmental colitis associated with diverticula (10-20%)
What is the best classification of complicated Diverticulitis to guide treatment?

Hinchey Classification

I Pericolic abscess or phlegmon

II Pelvic intra-abdominal, or retroperitoneal abscess

III Generalized purulent peritonitis

IV Generalized fecal peritonitis

What is the best classification of complicated Diverticulitis to guide treatment?

<table>
<thead>
<tr>
<th>Hinchey Classification</th>
<th>Modification (acc to CT findings)</th>
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<tbody>
<tr>
<td>I  Pericolic abscess or phlegmon</td>
<td>0  Diverticuli ± colonc wall thickening</td>
</tr>
<tr>
<td>II Pelvic intra-abdominal, or retroperitoneal abscess</td>
<td>Ia Colonic wall thickening with pericolic soft tissue changes</td>
</tr>
<tr>
<td>III Generalized purulent peritonits</td>
<td>Ib Changes + pericolic or mesocolic abscess</td>
</tr>
<tr>
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Colonic diverticulosis is age-dependent

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Prevalence (%)</th>
</tr>
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<tbody>
<tr>
<td>40</td>
<td>5%</td>
</tr>
<tr>
<td>60</td>
<td>50%</td>
</tr>
<tr>
<td>80</td>
<td>&gt;70%</td>
</tr>
</tbody>
</table>
1st Episode
Only 12% of patients have complicated disease with 1st episode
1st Episode

Only 4% will need emergency surgery
1st Episode

Within 6 months of a diagnosis of uncomplicated diverticulitis, only 2% of patients develop an abscess >5cm or perforation.

Randomized clinical trial of observational versus antibiotic treatment
1st Episode

40% mild to moderate periodic pain at 1 year follow up

chebak et al for AVOD study groups BJS 2012: 99; 532-539
2nd Episode

Incidence of recurrent diverticulitis is 20% at 5 years after an index episode

chebak et al for AVOD study groups BJS 2012: 99; 532-539
3rd Episode

Incidence of recurrence is 44% at 5 years after 2nd episode
Risk Factors

Genetics
Lifestyle
Medications
+ advancing age
GENETICS

Siblings of patients with diverticulitis -- 3X risk of diverticulitis

GENETICS

Siblings of patients with surgery for diverticulitis -- 5X risk of diverticulitis
GENETICS

Monozygotic twin -- 15X risk of diverticulitis
GENETICS

50% of the susceptibility to diverticulitis is due to inherited factors.
LIFESTYLE

Obesity, physical inactivity, smoking and a Western diet increase the risk of diverticulitis.
Diet

Red and processed meat
Refined grains
Sweets
French fries
High-fat dairy products
Diet

- Fruits
- Vegetables
- Whole grains
- Legumes
- Poultry & Fish
MEDICATIONS

Regular use of nonsteroidal anti-inflammatory drugs 2x risk of diverticulitis
What is the best approach
Question

Should antibiotics be routinely used in patients with acute uncomplicated diverticulitis?
Uncomplicated acute Diverticulitis

- **2 RCTs comparing antibiotics with no antibiotics**

  - **AVOD Study Group**: Antibiotic therapy does not prevent surgical complications or recurrence and does not shorten hospital stay
    
    Results → Chabok et al BJS 2012

  - **DIABOLO**: Full recovery after observational treatment is comparable to antibiotic treatment
    
    Trial protocol → Unlu et al BMC Surgery 2010
    Results → UEG2014, submitted Ann Int Med 2015
The 2 RCT’s on ab differ

<table>
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<tr>
<th>Population</th>
<th>AVOD</th>
<th>DIABOLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>M:F = 1:2</td>
<td>M:F = 1:1</td>
</tr>
<tr>
<td>Recurrent diverticulitis on inclusion in 40.1% of patients</td>
<td>No recurrent diverticulitis, exclusion criteria</td>
<td></td>
</tr>
</tbody>
</table>

| RCT Y/N                     | Y - multicenter, pragmatisch | Y - multicenter, pragmatisch |

| Diagnosis                   | CT proven diverticulitis: Ambrosetti mild (no abscesses) | CT proven diverticulitis: Hinchey 1a and 1b (small abscesses) |

| Intervention                | Broad spectrum antibiotics, 7 days | Amoxi/clav 4dd1200mg i.v. min. 48hr than 3dd625mg oral, total 10 days |

<table>
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<tr>
<th>Controls</th>
<th>No antibiotics</th>
<th>No antibiotics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission for i.v. fluid</td>
<td></td>
<td>Observation, no admission demanded</td>
</tr>
</tbody>
</table>

| Placebo Y/N                 | N                               | N                            |

| Primary endpoint            | Recovery without complications at 12 months follow-up | Time-to-full-recovery at 6 months follow-up |
AVOD: Swedish RCT, 623 pts, unblinded

CT-confirmed AUD, No Abx vs Abx for ≥ 7 days at MD’s discretion

<table>
<thead>
<tr>
<th></th>
<th>Abscess, perforation (P=0.3)</th>
<th>Recurrent diverticulitis (P=0.88)</th>
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<tbody>
<tr>
<td>No antibiotics</td>
<td>6 (1.9%)</td>
<td>47 (16.2%)</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>3 (1.0%)</td>
<td>46 (15.8%)</td>
</tr>
</tbody>
</table>

Graphs showing:
- **Abdominal pain**
- **Temperature**
- **Abdominal tenderness**
DIABOLO trial: Methods

- Open-label, randomised, controlled, pragmatic trial (NCT01111253)
- Non-inferiority design
- 22 clinical sites
- Observational treatment strategy vs antibiotic treatment strategy
- Computerised block randomisation
  - Stratification:
    - Hinchey stage Ia / Ib
    - Center
DIABOLO trial: inclusion criteria

- First episode of left sided, mild, acute diverticulitis
- US / CT proven
- CT (< 24h) to classify Modified Hinchey stage (1a/1b)
- Informed consent

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**Modified Hinchey**

- 0 Mild clinical diverticulitis
- 1a Colonic wall thickening/Confined pericoloc inflammation
- 1b Confined small (< 5 cm) pericoloc abscess
- II Pelvic, distant intraabdominal, or retroperitoneal abscess
- III Generalized purulent peritonitis
- IV Fecal peritonitis

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DIABOLO
(DIverticulitis, AntiBiotics or Close Observation?)

- Dutch 22-center, 528 pts, open label RCT of CT-confirmed uncomplicated left-sided AD, randomized to observation or IV Augmentin → PO (10d total)

- No difference in time to recovery, complicated diverticulitis, recurrent diverticulitis, surgery, readmission, AEs or mortality. Hospital stay was significantly shorter in the observation group (2 vs 3 days; P=0.006).
DIABOLO 2 years follow-up (89% of enrolled pts)

- No difference in recurrent (obs 15% vs abx 15%) or complicated (obs 4.8% vs abx 3.3%) diverticulitis
- No difference in emergency surgery (obs 3 vs abx 2), but trend toward more elective surgery in the observation group (7.7%) vs. abx (4.2%, p=0.09)
Meta Analysis 2018

**Major complications**

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>No Antibiotics Events</th>
<th>Total</th>
<th>Antibiotics Events</th>
<th>Total</th>
<th>Weight</th>
<th>M-H, Random, 95% CI</th>
<th>Odds Ratio</th>
<th>M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brockman 2013</td>
<td>14</td>
<td>177</td>
<td>6</td>
<td>47</td>
<td>11.7</td>
<td>0.59 [0.21, 1.66]</td>
<td>0.72 [0.45, 1.16]</td>
<td></td>
</tr>
<tr>
<td>Chabok 2012</td>
<td>69</td>
<td>309</td>
<td>91</td>
<td>314</td>
<td>21.3</td>
<td>1.17 [0.70, 1.97]</td>
<td>1.07 [0.67, 1.71]</td>
<td></td>
</tr>
<tr>
<td>Daniels 2017</td>
<td>31</td>
<td>262</td>
<td>21</td>
<td>266</td>
<td>10.1</td>
<td>1.57 [0.87, 2.80]</td>
<td>1.56 [0.86, 2.83]</td>
<td></td>
</tr>
<tr>
<td>Hjem 2009</td>
<td>55</td>
<td>193</td>
<td>47</td>
<td>118</td>
<td>19.6%</td>
<td>0.60 [0.37, 0.98]</td>
<td>0.36 [0.12, 1.04]</td>
<td></td>
</tr>
<tr>
<td>Isaacson 2014</td>
<td>29</td>
<td>178</td>
<td>8</td>
<td>17</td>
<td>11.0%</td>
<td>0.30 [0.12, 0.78]</td>
<td>0.40 [0.12, 1.36]</td>
<td></td>
</tr>
<tr>
<td>Kortel 2011</td>
<td>35</td>
<td>191</td>
<td>29</td>
<td>81</td>
<td>10.1%</td>
<td>0.40 [0.22, 0.77]</td>
<td>0.40 [0.22, 0.77]</td>
<td></td>
</tr>
</tbody>
</table>

Total (95% CI): 1310 | 843 | 100.0% | 0.72 [0.45, 1.16] |

Test for overall effect: Z = 1.34 (P = 0.18)

**Surgery**

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<th>Study or Subgroup</th>
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<tr>
<td>Brockman 2013</td>
<td>2</td>
<td>177</td>
<td>1</td>
<td>47</td>
<td>13.1%</td>
<td>0.53 [0.20, 1.35]</td>
<td>0.69 [0.24, 2.25]</td>
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<tr>
<td>Chabok 2012</td>
<td>7</td>
<td>309</td>
<td>91</td>
<td>314</td>
<td>22.0%</td>
<td>1.43 [0.45, 4.56]</td>
<td>1.43 [0.45, 4.56]</td>
<td></td>
</tr>
<tr>
<td>Daniels 2017</td>
<td>6</td>
<td>262</td>
<td>3</td>
<td>266</td>
<td>21.2%</td>
<td>2.78 [0.72, 10.52]</td>
<td>2.78 [0.72, 10.52]</td>
<td></td>
</tr>
<tr>
<td>Hjem 2009</td>
<td>1</td>
<td>193</td>
<td>10</td>
<td>118</td>
<td>15.4%</td>
<td>0.08 [0.01, 0.45]</td>
<td>0.08 [0.01, 0.45]</td>
<td></td>
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<tr>
<td>Isaacson 2014</td>
<td>2</td>
<td>178</td>
<td>8</td>
<td>17</td>
<td>12.9%</td>
<td>0.19 [0.02, 1.23]</td>
<td>0.19 [0.02, 1.23]</td>
<td></td>
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<tr>
<td>Kortel 2011</td>
<td>4</td>
<td>191</td>
<td>1</td>
<td>81</td>
<td>14.5%</td>
<td>1.71 [0.19, 15.55]</td>
<td>1.71 [0.19, 15.55]</td>
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Total (95% CI): 1310 | 843 | 100.0% | 0.69 [0.24, 2.25] |

Test for overall effect: Z = 0.62 (P = 0.54)

**Recurrences**

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<td>47</td>
<td>7.1%</td>
<td>0.40 [0.12, 1.36]</td>
<td>0.77 [0.55, 1.08]</td>
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<tr>
<td>Chabok 2012</td>
<td>50</td>
<td>309</td>
<td>50</td>
<td>314</td>
<td>33.5%</td>
<td>1.02 [0.68, 1.56]</td>
<td>0.77 [0.55, 1.08]</td>
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<td>9</td>
<td>262</td>
<td>8</td>
<td>266</td>
<td>10.7%</td>
<td>1.15 [0.44, 3.02]</td>
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<td>Hjem 2009</td>
<td>50</td>
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<td>118</td>
<td>27.2%</td>
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<td>Kortel 2011</td>
<td>13</td>
<td>191</td>
<td>12</td>
<td>81</td>
<td>13.3%</td>
<td>0.42 [0.18, 0.97]</td>
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Total (95% CI): 1310 | 843 | 100.0% | 0.77 [0.55, 1.08] |

Test for overall effect: Z = 1.47 (P = 0.14)

**Length of Stay**

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>No Antibiotics Mean</th>
<th>SD</th>
<th>Antibiotics Mean</th>
<th>SD</th>
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<td>1.2</td>
<td>177</td>
<td>2.5</td>
<td>47</td>
<td>1.89</td>
<td>0.00 [-0.10, 0.20]</td>
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<tr>
<td>Chabok 2012</td>
<td>2.9</td>
<td>1.6</td>
<td>309</td>
<td>2.9</td>
<td>314</td>
<td>21.6%</td>
<td>-0.00 [-0.28, 0.28]</td>
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<td>Daniels 2017</td>
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<td>0.3</td>
<td>262</td>
<td>0.2</td>
<td>266</td>
<td>22.5%</td>
<td>0.00 [-0.28, 0.28]</td>
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<td>2.6</td>
<td>178</td>
<td>5.4</td>
<td>4</td>
<td>17.5%</td>
<td>-3.50 [-5.41, -0.99]</td>
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<td>Kortel 2011</td>
<td>7.0</td>
<td>5.1</td>
<td>191</td>
<td>7</td>
<td>5</td>
<td>21.1%</td>
<td>-1.13 [-1.77, -0.48]</td>
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Total (95% CI): 1310 | 843 | 100.0% | -1.13 [-1.77, -0.48] |

Test for overall effect: Z = 3.44 (P = 0.0008)
Meta Analysis 2018

**Major complications**

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<td>31</td>
<td>282</td>
<td>1.57 (0.87, 2.80)</td>
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<td>Isacson 2014</td>
<td>29</td>
<td>158</td>
<td>0.36 (0.12, 1.08)</td>
</tr>
<tr>
<td>Korte 2011</td>
<td>35</td>
<td>131</td>
<td>0.90 (0.32, 2.72)</td>
</tr>
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**Surgery**

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<tr>
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**Recurrences**

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<td>Chabok 2012</td>
<td>50</td>
<td>309</td>
<td>1.02 (0.66, 1.59)</td>
</tr>
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<td>Daniels 2017</td>
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<td>262</td>
<td>1.15 (0.44, 3.02)</td>
</tr>
<tr>
<td>Hjem 2009</td>
<td>50</td>
<td>193</td>
<td>0.90 (0.54, 1.51)</td>
</tr>
<tr>
<td>Isacson 2014</td>
<td>21</td>
<td>178</td>
<td>0.43 (0.13, 1.48)</td>
</tr>
<tr>
<td>Korte 2011</td>
<td>21</td>
<td>131</td>
<td>0.42 (0.08, 1.87)</td>
</tr>
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</table>

**Length of Stay**

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>No Antibiotics</th>
<th>Antibiotics</th>
<th>Mean Difference N, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brockman 2013</td>
<td>1.5</td>
<td>12</td>
<td>-1.00 (-1.96, -0.04)</td>
</tr>
<tr>
<td>Chabok 2012</td>
<td>5</td>
<td>130</td>
<td>0.00 (-0.28, 0.28)</td>
</tr>
<tr>
<td>Daniels 2017</td>
<td>2</td>
<td>262</td>
<td>-0.80 (-3.84, 2.07)</td>
</tr>
<tr>
<td>Hjem 2009</td>
<td>55</td>
<td>213</td>
<td>-2.70 (-5.31, -0.10)</td>
</tr>
<tr>
<td>Isacson 2014</td>
<td>19</td>
<td>120</td>
<td>-3.50 (-5.41, -1.59)</td>
</tr>
<tr>
<td>Korte 2011</td>
<td>7</td>
<td>53</td>
<td>0.00 (-1.30, 1.30)</td>
</tr>
</tbody>
</table>

Meta Analysis 2018

Meta Analysis 2018
European Consensus Groups

Dutch Working Group 2013
• “There is no evidence that antibiotics should be routinely administered to patients with uncomplicated diverticulitis. Antibiotic treatment is recommended when signs of generalized infection or bacteremia or septicemia are present… or in immunocompromised patients”

Italian Consensus Conference 2014
• “Antibiotics may not improve outcome in AUD and are used on a case-by-case basis… This new evidence needs, however, further confirmations before it can be safely adopted in clinical practice”

German GI and Surgical Societies 2014
• “Antibiotics are no longer recommended in uncomplicated diverticulitis if no risk factors such as immunosuppression are present… New findings call into question the overuse of antibiotics and excessive indications for surgery.”
late 2015

Question

Should antibiotics be routinely used in patients with acute uncomplicated diverticulitis?

The AGA suggests that antibiotics should be used selectively, rather than routinely, in patients with acute uncomplicated diverticulitis.

(Conditional recommendation, low quality of evidence).
Question

Should mesalamine rather than placebo be used in patients with a history of acute uncomplicated diverticulitis?
Mesalazine for Acute SDD

- Patients with a diagnosis of acute, symptomatic, uncomplicated DD
- Age 45-80 years
- Pain on at least 4 out of 7 previous 7 days
- + 4/8 of following
  - abdominal pain
    - localised mainly in the lower left part of the abdomen
    - enhanced after meals
    - decreased after defaecation or wind
  - painful lower left abdomen at palpation
  - bloating
  - constipation defined as <2 defaecations/week
  - diarrhoea, defined as >3 loose stools per day
  - sensation of incomplete evacuation after defaecation
- Fever was exclusion
- Randomised to Mesalazine 1gm t.d.s. (62) or placebo (61) for 6 weeks
- Completed Mesalazine 40, placebo 56
- Primary endpoint: change in intensity of lower abdominal pain from baseline during the first 4 weeks of treatment

Mesalazine for Acute SDD


% patients with complete pain relief at 6 weeks
Mesalazine ± Probiotics for SDD

- 12 month multicentre, randomised, double-blind, double-dummy, parallel groups, placebo-controlled trial
- **210 patients with diverticulosis + prolonged pain**
- Previous episode of prolonged pain scoring ≥5/10 for >24 h during 4 week period prior to randomisation
- All treated for 10 days/month
  - Group M = Mesalazine 800mg b.d. + placebo
  - Group L = *L. casei subsp. DG* 1 sachet/day + placebo
  - Group LM = Mesalazine 800mg b.d. +L. casei subsp. DG* 1 sachet/day
  - Group P = Mesalazine placebo + probiotic placebo
- Assessed for symptoms
- Primary endpoint = maintenance of remission (absence of recurring abdominal pain scored ≥5 for ≥24h

Tursi et al Aliment Pharmacol Ther 2013; 38:741-51
Mesalazine ± Probiotics for SDD

Primary endpoint = maintenance of remission (absence of recurring abdominal pain scored ≥5 for ≥24h)

Kaplan-Maier analysis P<0.0001

Tursi et al Aliment Pharmacol Ther 2013; 38:741-51
Mesalamine after AD: the DIVA Trial

52 week RPCT, CT-confirmed AD, excluded IBS Dx
- Standard care (abx, then dietary advice as per local MD)
- Standard care, plus mesalamine 2.4gm QD
- Standard care, plus mesalamine 2.4gm QD plus B. infantis QD

12 week Rx with 40 week additional f/u
- Lower GSS at all time points with 5ASA but NS (no effect for probiotics)
- No effect on acute diverticulitis recurrence rates

![Graph showing median GSS scores over time for different groups: Placebo, Mesalamine, Mesalamine + Probiotic.](image)
5ASA: the “Final Answer”

- Phase III RDBPC (PREVENT 1 and 2)
- >1000 patients with ≥1 episode of acute uncomplicated diverticulitis
- Randomized to receive mesalamine (1.2, 2.4, or 4.8 g/d) or placebo
- Primary endpoint: proportion of patients free of recurrent diverticulitis (surgical intervention or positive CT scan)
- No decrease time to recurrence or Sxs
- **No dose of 5ASA superior to PBO for reducing diverticulitis at 104 weeks**
Question

Should mesalamine rather than placebo be used in patients with a history of acute uncomplicated diverticulitis?

The AGA recommends against the use of mesalamine after acute uncomplicated diverticulitis.

(Strong recommendation, moderate quality of evidence).
Question

Should rifaximin rather than placebo be used in patient with history of acute uncomplicated diverticulitis?
# Rifaximin in SUDD

**Prospective randomized trials in 1660 patients**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Patients</th>
<th>Study design</th>
<th>Treatment</th>
<th>Treatment comparator</th>
<th>Treatment period</th>
<th>Improvement</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papi et al. (1992)</td>
<td>217</td>
<td>Open</td>
<td>Rifaximin* + Glucomannan</td>
<td>Glucomannan</td>
<td>12</td>
<td>58% vs 24%</td>
<td>34%</td>
</tr>
<tr>
<td>Papi et al. (1995)</td>
<td>168</td>
<td>RCT</td>
<td>Rifaximin* + Glucomannan</td>
<td>Glucomannan + Placebo</td>
<td>12</td>
<td>69% vs 40%</td>
<td>29%</td>
</tr>
<tr>
<td>Latella et al. (2003)</td>
<td>968</td>
<td>Open</td>
<td>Rifaximin* + Glucomannan</td>
<td>Glucomannan</td>
<td>12</td>
<td>56% vs 29%</td>
<td>27%</td>
</tr>
<tr>
<td>Colecchia et al. (2007)</td>
<td>307</td>
<td>Open</td>
<td>Rifaximin* + Dietary Fiber$</td>
<td>Dietary Fiber$</td>
<td>24</td>
<td>90% vs 59%</td>
<td>31%</td>
</tr>
</tbody>
</table>

* Rifaximin 400 mg b.d. for 7 days each month for 12 months
* Glucomannan 2-4 g / day
* Dietary fibre Supplementation (20g/die)

Rifaximin symptom improvement in SUDD

Pooled Rate Difference for symptom relief: 29% for rifaximin vs control
Pooled RD for complication: -1.7% in favour of rifaximin
NNT= 3
Rifaximin after acute Uncomplicated Diverticulitis

P = 0.164

N at risk: treated 77 controls 88

A. Lanas et al. / Digestive and Liver Disease 45 (2013) 104–109
Should Rifaximin Rather Than No Therapy Be Used in Patients With a History of Acute Uncomplicated Diverticulitis?

<table>
<thead>
<tr>
<th>Outcomes/no. of participants (no. of studies)</th>
<th>Risk ratio (95% CI)</th>
<th>Anticipated absolute effects</th>
<th>Quality of the evidence (GRADE)</th>
<th>What happens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Without rifaximin</td>
<td>With rifaximin</td>
<td>Difference (95% CI)</td>
</tr>
<tr>
<td>Recurrence (follow-up, 1 y)/165 patients (1 study)</td>
<td>0.54 (0.25–1.18)</td>
<td>190 recurrences per 1000 patients at 5 y</td>
<td>102 recurrences per 1000 patients at 5 y</td>
<td>88 fewer recurrences (from 142 fewer to 34 more per 1000 patients)</td>
</tr>
<tr>
<td>Diverticular complications</td>
<td>—</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Surgery</td>
<td>—</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Chronic abdominal pain (follow-up, 1 y)/165 patients (1 study)</td>
<td>—</td>
<td>No substantial change in pain intensity during treatment was observed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. Lanas et al. / Digestive and Liver Disease 45 (2013) 104– 109
Question

Should rifaximin rather than placebo be used in patient with history of acute uncomplicated diverticulitis?

The AGA suggests against the use of rifaximin after acute uncomplicated diverticulitis (conditional recommendation, very low quality of evidence)
Question

Should a high fiber diet, rather than a regular diet be advised in patients with a history of acute diverticulitis?
Mechanisms of action of fiber

- Stool bulking
  - ↑ Osmotic load
  - Acceleration of transit time
- Short chain fatty acids (SCFA) (Butyrate, propionate, acetate)
  - Microbiome changes
  - Increased biomass
- Fermentation
  - Luminal pH ↓
  - Effect on inflammation and permeability
- Gas production (CH₄, H₂, CO₂)
  - Pain bloating, influence

Risk of hospital admission or death associated with dietary habits

Cohort of 47,033 subjects in England and Scotland

- Meat eaters: Reference
- Vegetarians or vegans: RR = 0.69 (0.55-0.86)
- Vegetarians highest quintile, 50-75 years: RR = 0.59 (0.46-2.078)
A High-Fiber Diet Does Not Protect Against Asymptomatic Diverticulosis

ANNE F. PEERY,* PATRICK R. BARRETT,* DOYUN PARK,**‡ ALBERT J. ROGERS,* JOSEPH A. GALANKO,* CHRISTOPHER F. MARTIN,* and ROBERT S. SANDLER*

*Department of Medicine, University of North Carolina School of Medicine, Chapel Hill, North Carolina; ‡Department of Medicine, Albert Einstein College of Medicine, Bronx, New York

- High intake of fiber did not reduce the prevalence of diverticulosis
- Instead, highest fiber intake had a greater prevalence of diverticulosis than the lowest (1.30; 95% CI, 1.13–1.50)
- Constipation was not a risk factor
- Diarrhea was a risk for diverticulosis
Question

Should a high fiber diet, rather than a regular diet be advised in patients with a history of acute diverticulitis?

The AGA suggests a fiber rich diet or fiber supplementation in patients with a history of acute diverticulitis.

(Conditional recommendation, very low-quality of evidence)
Question

Should consumption of nuts and popcorn be avoided in patient with a history of acute diverticulitis?
Do Seeds and nuts cause AD?

ACG Practice Guidelines 1999¹
• “Controlled studies that support this belief are lacking… no role for ‘elimination’ diet”

Strate et al 2008² [USHP f/u Study]
• 47,000 men free of DD on entry, followed 18 years
• 801 incident cases of diverticulitis
• Hazard ratio for highest vs lowest consumption
  • Nuts: 0.80 (0.63 – 1.01), p=0.04
  • Popcorn: 0.72 (0.56 – 0.92), p=0.007
Question

Should consumption of nuts and popcorn be avoided in patients with a history of acute diverticulitis?

The AGA suggest against routinely advising patients with a history of acute diverticulitis to avoid consumption of nuts and popcorn.

(Conditional recommendation, very-low quality of evidence).
Is low vitamin D a risk factor for diverticulitis?

(suggested by seasonal and regional differences)