Treatment algorithms for diverticulitis

„Intestinal disorders“
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Diverticular disease
- pretreatment considerations -

¿ Acute diverticulitis:  ● Severity?
   ● uncomplicated ➔ complicated?

¿ Recurrent diverticulitis:  ● Structural damages?
   ● Secondary prevention of acute attacks
   ● Surgery
Diverticular disease
- pretreatment considerations -

Acute diverticulitis:
- Severity?
- uncomplicated \(\leftrightarrow\) complicated?
Severity and different phases of Diverticulitis

mod. acc. to Hansen & Stock, 1999

Phase I
- Mild inflammation

Phase II
- Peridiverticulitis
- Penetrating
- Perforatin
  - Phlegmone
  - Abscess
  - Peritonitis

Phase III
- Recurrent

Mild
- Uncomplicated
- Acute

Moderate
- Complicated

Severe
- Complicated
Diverticula of the Colon

100% = All subjects with colonic diverticula
• 30%: Any Diverticular disease
• * 5% of all subjects with diverticula

Asymptomatic
Uncomplicated Diverticular disease
Complications

Dis Colon Rectum 1989; 32
Dis Colon Rectum 1996; 39
Clinical Gastroenterology 1975; 4
Diverticulosis - Diverticulitis

Diverticulitis occurs primarily on the outer side of the bowel wall

Ergo:
Diagnosis of diverticulitis is made by cross sectional imaging!

\textit{Diverticulum without surrounding inflammation}

\textbf{Ultrasound}

\textit{Diverticulum with surrounding inflammation}
CT: Diverticulitis with abscess formation
Treatment of acute Diverticulitis with complications

- Perforation
- Phlegmone / Abscess formation
- Not self limited bleeding

Intervention / Surgery
Treatment of acute Diverticulitis

- uncomplicated mild -
Treatment of acute Diverticulitis

- uncomplicated mild -

- Outpatient care possible,
  Dietary restriction, sufficient fluid replacement,
- Analgesics (spasmolytics)

- Drugs:
  Antibiotics ??
  Aminosalicylates ?
Antibiotics for uncomplicated Diverticulitis

Retrospective study
n = 311;
Patients with diverticulitis, treated
• with antibiotics (n = 193)
• without antibiotics (n = 311)

CONCLUSIONS: “Our results indicate that antibiotics are not mandatory in mild acute diverticulitis. Treatment without antibiotics appears to be safe and seems not to change the rate of further events.”

Scand J Gastroenterol 2007;42:41-7
Hjern F, Josephson T, Altman D, Holmström B, Mellgren A, Pollack J, Johansson C. Division of Surgery, Karolinska Institutet, Stockholm
Mesalamine in painful Diverticular Disease (Diverticulitis)

Prospective, randomised (n=123), placebo-controlled; mesalamine pellets 3x1g/d

ITT PP

Δ pain score (day 28)

* Significant difference

Treatment of acute Diverticulitis

- uncomplicated moderate to severe -

- In most patients hospitalisation is recommended, nothing by mouth, i.v. - therapy
- Analgesics (spasmolytics), fluid/electrolyte substitution

**Drugs:**
Antibiotics

(If necessary interdisciplinary discussion with surgeons)
Diverticular disease
- pretreatment considerations -

Recurrent diverticulitis:
- Structural damages?
- Secondary prevention of acute attacks
- Surgery
Treatment of Diverticulitis

- recurrent -

Patients` status:  Structural dammages?
- chronic abscess formation
- stenosis
- fistulae

As diagnosed by ultrasound and/or CT and/or colonoscopy (stenosis)
Risk factors for development of complicated Diverticulitis

- Immunoincompetence

- Drugs (NSAIDs)

- Diabetes mellitus
  - S Hollerbach, 2006

- Phenotype: young, fat, male

- Localisation (right-sided)
  - Y Reismann et al. Int J Colorectal Dis, 1999
Treatment of Diverticulitis

- recurrent -

- Structural dammages

and / or

- Risk factors

Consider elective surgery
Treatment of Diverticulitis

- recurrent -

- Without structural damages

and / or

- Risk factors
Treatment of recurrent Diverticulitis

- prevention of acute attacks -

- Secondary prevention of acute attacks - physical activity
  - fibre (Plantago)

**Drugs:**
- Cyclical antibiotics
- Aminosalicylates (?)
- Probiotics ??

- Elective surgery (?)
Prevention of divertikulitis
- diets and life style -

**DIETARY FIBRE INTAKE (g/d)**

Relative Risk

- Low (<17)
  - 0.85
- Medium (17-28)
  - 1.21
- High (+29)
  - 1.0

**PHYSICAL ACTIVITY**
(Total MET)

Low (<1.0)
Medium (1-32.5)
High (>32.5)

*Adjusted for age and total energy.
Prevention of acute attacks of recurrent diverticulitis with cyclical Rifaximin

Global symptom score

Months

N.S.  N.S.  P<0.05  P<0.001  P<0.001

Prevention of acute attacks of recurrent diverticulitis with Antibiotics +/- Mesalazine

Patients free of symptoms (%)

- **Group combined Rif + Mes:**
  - Rifaximin 400 mg bid + Mesalazine 800 mg bid
  - 7 days
  - Afterwards
  - Rifaximin 400 mg bid + Mesalazine 800 mg bid
  - 1 week/month

- **Group Rifaximin:**
  - Rifaximin 400 mg bid
  - 7 days
  - Afterwards
  - Rifaximin 400 mg bid
  - 1 week/month

n = 218; recurrent divertikulitis

A Tursi et al Digest Liver Dis 2002; 34:510-515
Recurrent Diverticulitis: Remission after Mesalazine

- Probability to remain in remission
  - Mesalazine vs Kontrolle

- n = 166
- Drop outs n = 44
  - (12 bec/ complications 2%, 7.2%)
  - p < 0.001

- E Trespi et al
  - Minerva Gastroenterol Dietol 1999; 45:245-252

- Mesalazine 2x400mg/d
  - 7 days
  - O-diet
  - + antibiotics
  - controls > 30g fibres/d

- 8 Weeks

- 48 months follow-up
The number of attacks of uncomplicated diverticulitis is not necessarily an overriding factor in defining the appropriateness of surgery. CT graded severity of a first attack is a predictor of an adverse natural history and may be helpful in determining the need for surgery.

The Standards Committee of The American Society of Colon and rectal Surgeons
Dis Colon Rectum 2006;49:939-944
### Treatment algorithms for diverticulitis

#### - Summary -

<table>
<thead>
<tr>
<th>Diverticular disease/Diverticulitis</th>
<th>Acute</th>
<th>Recurrent</th>
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<tr>
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<td>Complicated</td>
<td>Surgery</td>
<td>Fibre Phys activity</td>
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<td>Uncomplicated</td>
<td>Diet</td>
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<td>0-Diet iv-therapy/substitution</td>
<td>5-ASA Probiotics</td>
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<td>Analgesics</td>
<td>With structural damage/risk factors</td>
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<td>5-ASA</td>
<td>Without</td>
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<td>Analgesics</td>
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<td>Moderate/Severe</td>
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<td>Phys activity</td>
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<td>Cycling antibiotics</td>
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<td>5-ASA Probiotics</td>
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**Surgery:**
- Complicated
- Uncomplicated

**Diet:**
- Diet
- 0-Diet
- Diet

**Analgesics:**
- Analgesics
- Analgesics

**5-ASA:**
- 5-ASA
- 5-ASA

**Antibiotics:**
- Antibiotics
- Antibiotics

**0-Diet iv-therapy/substitution:**
- 0-Diet
- 0-Diet

**Phys activity:**
- Cycling
- Cycling

**Probiotics:**
- Probiotics
- Probiotics