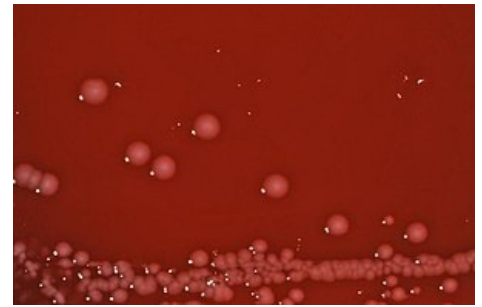


Shigellosis

Shigellosis or **bacillary dysentery** (bacterial dysentery) is an acute, highly infectious diarrheal disease with a typical mucus and blood in the stool, often accompanied by fever and abdominal cramps.

Originator	<i>Shigella</i> spp.
Transmission	direct contact, contaminated water and food
Incubation time	1-4 days ^[1]
Clinical picture	diarrhea with blood and mucus, fever, chills, chills
Infectiousness	highly infectious
Therapy	rehydration, ATB: co-trimoxazole, fluoroquinolones, rifaximin
Classifications and references	
MedlinePlus	000295 (https://medlineplus.gov/ency/article/000295.htm)
Medscape	968773 (https://emedicine.medscape.com/article/968773-overview)



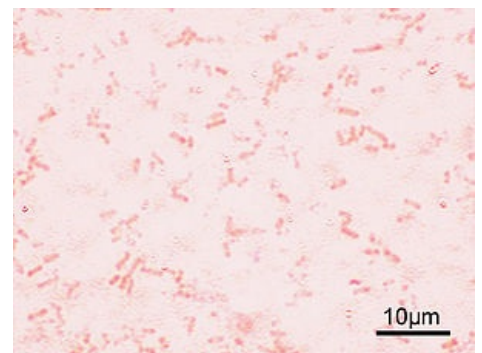
S. Boydii on blood agar

Etiology and pathogenesis

Shigellas are gram-negative stationary sticks. The genus *Shigella* is divided into:

- *Shigella dysenteriae* – group A shigellosis (*Shiga-Kruse dysentery*),
- *Shigella flexneri* – group B shigellosis,
- *Shigella boydii* – group C shigellosis,
- *Shigella sonnei* – group D shigellosis.

They are sensitive to disinfectants but survive in acidic environments for several hours. Bacteria multiply rapidly in the **small intestine**, but only in the large intestine is the **intestinal epithelium damaged**, into which shigellas penetrate and multiply in them. Subsequently, they also attack neighboring enterocytes, which then die of necrosis. Macroscopically, we see an **inflammatory to necrotically altered mucosa**, especially the **distal sections of the colon**. *Shigella* is characterized by the production of toxins, which make it easier to get intracellularly and induce apoptosis. In addition, *Shigella dysenteriae* serotype I produces **shiga toxin** with the properties of cytotoxin, neurotoxin, and enterotoxin and cause more severe diseases. Shiga toxin is very similar to verotoxin of enterohemorrhagic *E. coli*.



Shigella flexneri Gram's staining

Epidemiology

The source of infection is **contaminated food, sick or convalescent person**. It is an exclusively human disease, it is a typical disease of "dirty hands", occurring epidemically in **groups where it is difficult to maintain hygiene** (children's camps, social institutions, psychiatric hospitals, etc.). The alimentary transmission occurs through infected food, especially milk and water. The **infectious dose** is only 10-100 bacteria.^[1] Shigellosis is the most infectious bacterial intestinal infection. The global incidence is estimated at **200 million cases** per year.^[2] Due to hygienic measures, the disease is uncommon in the Czech Republic – about 400 cases per year, of which 20% of diseases are imported. Children are most often affected during the summer months.

Clinical symptoms

- Sudden fever (febrile convulsions and symptoms of meningeal irritation in children), chills,
- cramping abdominal pain, located more to the left,
- diarrhea – first large watery stools, with a decrease in temperature it turns into numerous small stools with blood and mucus,
- painful tenesmus,
- vomiting rarely.

The course depends on the age, nutrition of the patient and his general condition. A complication may be hemolytic uraemic syndrome in strains producing shiga toxin or intestinal abscess.

Diagnosis

We use stool culture to confirm the diagnosis. In case of ambiguity, we realize a serotyping.

Therapy

- rehydration,
- antibiotics – therapeutic and epidemiological effect,
 - co-trimoxazole,
 - fluoroquinolones,
 - rifaximin,
 - azithromycin,
- probiotics,
- drugs decreasing the frequency of diarrhea are not suitable (risk of toxic megacolon).

Differential diagnosis

We also consider differential diagnosis of EIEC, EHEC, amoebiasis, campylobacter infection, yersiniosis, and non-typhoid salmonellosis.

References

Related Articles

- Enterotoxigenic

External References

- Mim's Microbiology: [1] (<https://booktree.ng/mims-medical-microbiology-5th-edition-pdf/>)

Sources

- KLIEGMAN, Robert M. – MARCDANTE, Karen J. – JENSON, Hal B.. *Nelson Essentials of Pediatrics*. 1. edition. Elsevier Saunders, 2006. pp. 513-518. ISBN 978-0-8089-2325-1.
- BENEŠ, Jiří. *Infekční lékařství*. 1. edition. 2009. ISBN 978-80-7262-644-1.
- WHO. *WHO-shigella* [online]. [cit. 2011-03-15]. <<http://www.who.int/topics/shigella/en/>>.

References

1. GOERING, Richard V – DOCKRELL, Hazel M. *Mimova lékařská mikrobiologie*. 5. edition. Praha : Triton, 2016. 283, 288 pp. pp. 568. ISBN 978-80-7387-928-0.
2. BENEŠ, Jiří. *Infekční lékařství*. 1. edition. Galén, 2009. pp. 234-235. ISBN 978-80-7262-644-1.

Intestinal infections	
General	Differential diagnosis of diarrheal diseases • Enterotoxigenic • Diarrheal diseases in childhood • Drug-induced diarrhea • Therapy of diarrheal diseases
Bacterial	Alimentary poisoning <i>B. cereus</i> • Typhoid fever • Clostridial colitis • Cholera • <i>E. coli</i> colitis • Infection with non-cholera vibrations • Campylobacter enteritis • Paratyphoid • Salmonella enteritis • Shigellosis • Staphylococcal enterotoxigenic • Yersiniosis
Viral	Adenovirus enteritis • Coronavirus enteritis • Norovirus enteritis • Rotavirus enteritis
Parasitic	Amoebiasis • Ascariasis • Enterobiosis • Giardiasis • Hymenolepiasis • Cryptosporidiosis • Teniosis • Toxoplasmosis • Trichinellosis • Trichuriasis

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