



重庆医科大学第二临床学院
THE SECOND CLINICAL COLLEGE OF CHONGQING MEDICAL UNIVERSITY

INFECTIOUS DISEASES

Bacillary dysentery (细菌性痢疾)

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Aim and Requirements

1. Grasp the **clinical manifestations, diagnosis and differential diagnosis, treatment** of bacillary dysentery.
2. Familiar the epidemiology, pathogenesis for common bacillary dysentery.
3. Familiar the the pathogen, the prevention of bacillary dysentery.



Definition (定义)

- An acute bacterial infection of the intestine characterized by **abdominal pain (腹痛)**, **diarrhea (腹泻)**, **fever (发热)**, **tenesmus (里急后重)** and in severe cases **bloody and mucopurulent stools (粘液脓血便)**.
- **Shigella (志贺菌属)** organisms cause bacillary dysentery, a disease that has been recognized since the time of *Hippocrates*.



Definition

Shigella species are aerobic, non-motile, glucose-fermenting, non-spore-forming, gram-negative rods.

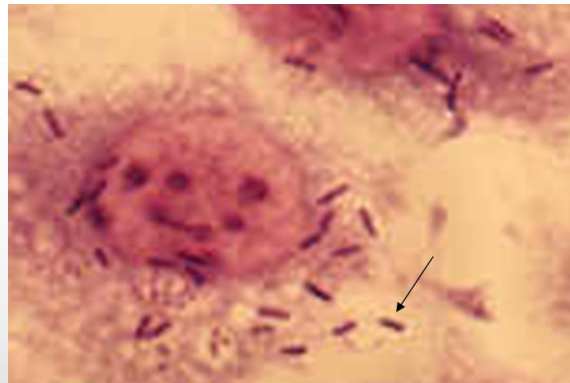
It is highly contagious, causing diarrhea after ingestion of as a few as 10 organisms.



Etiology (病原学)

4 species of shigella are identified, namely:

- **Shigella Dysenteriae** (痢疾志贺菌)
- **Shigella Flexneri** (福氏志贺菌)
- **Shigella Sonnei** (宋内志贺菌)
- **Shigella Boydii** (鲍氏志贺菌)





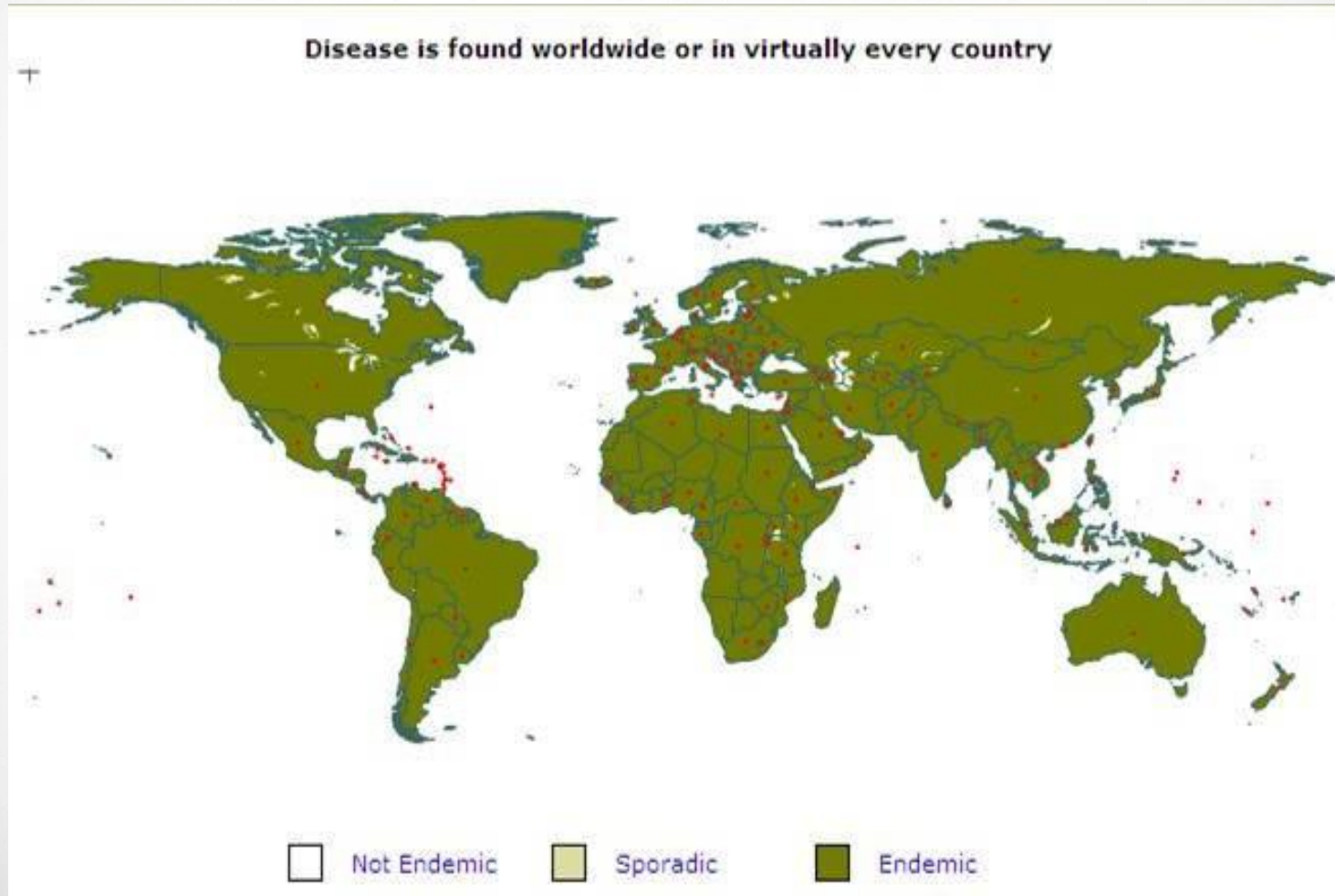
Epidemiology (流行病学)

- The incidence in developing countries is 20 times greater than that in industrialized countries.
- >95% of shigella infections are asymptomatic hence the actual incidence may be 20 times higher than is reported.



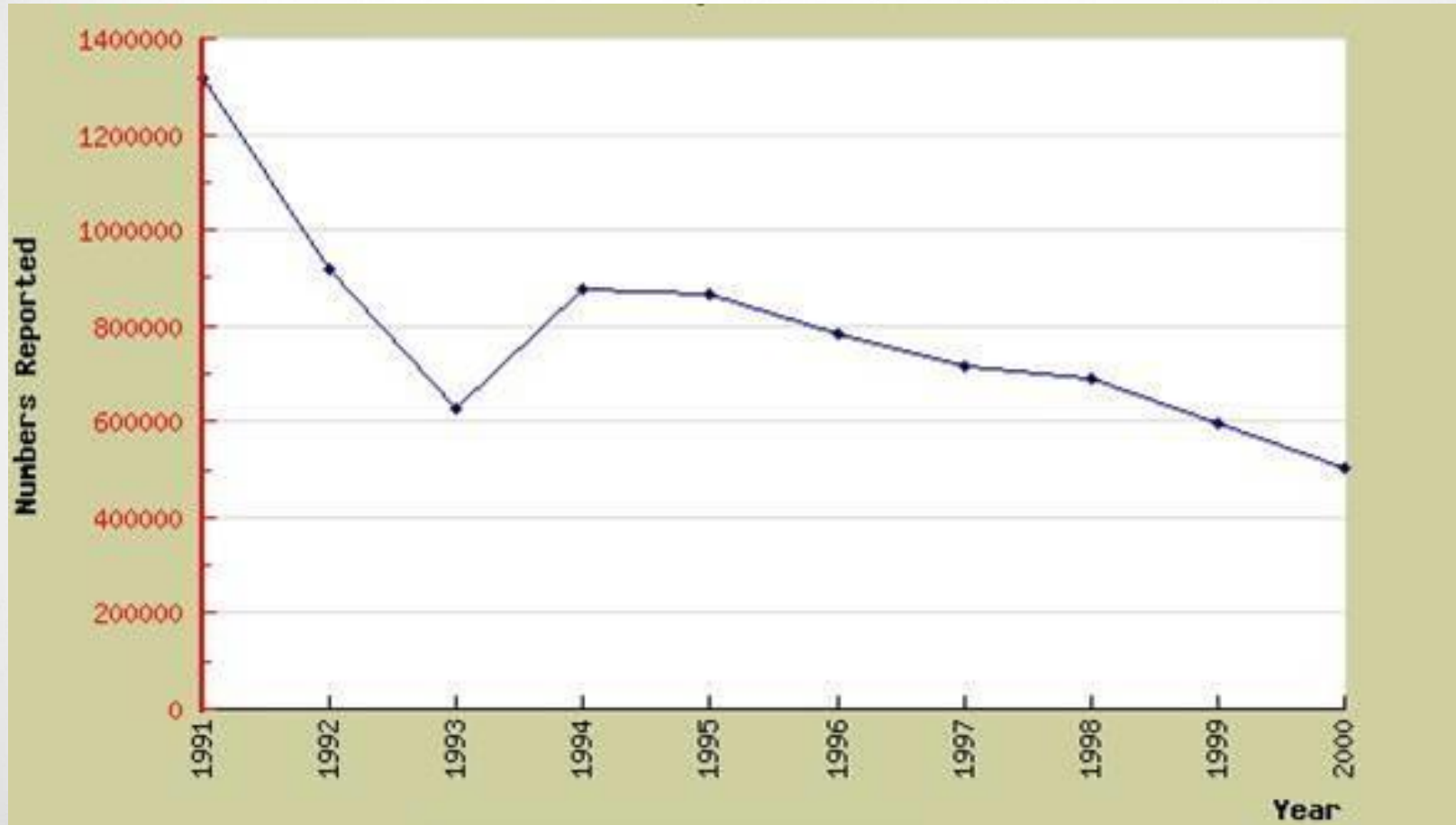


Shigellosis in World



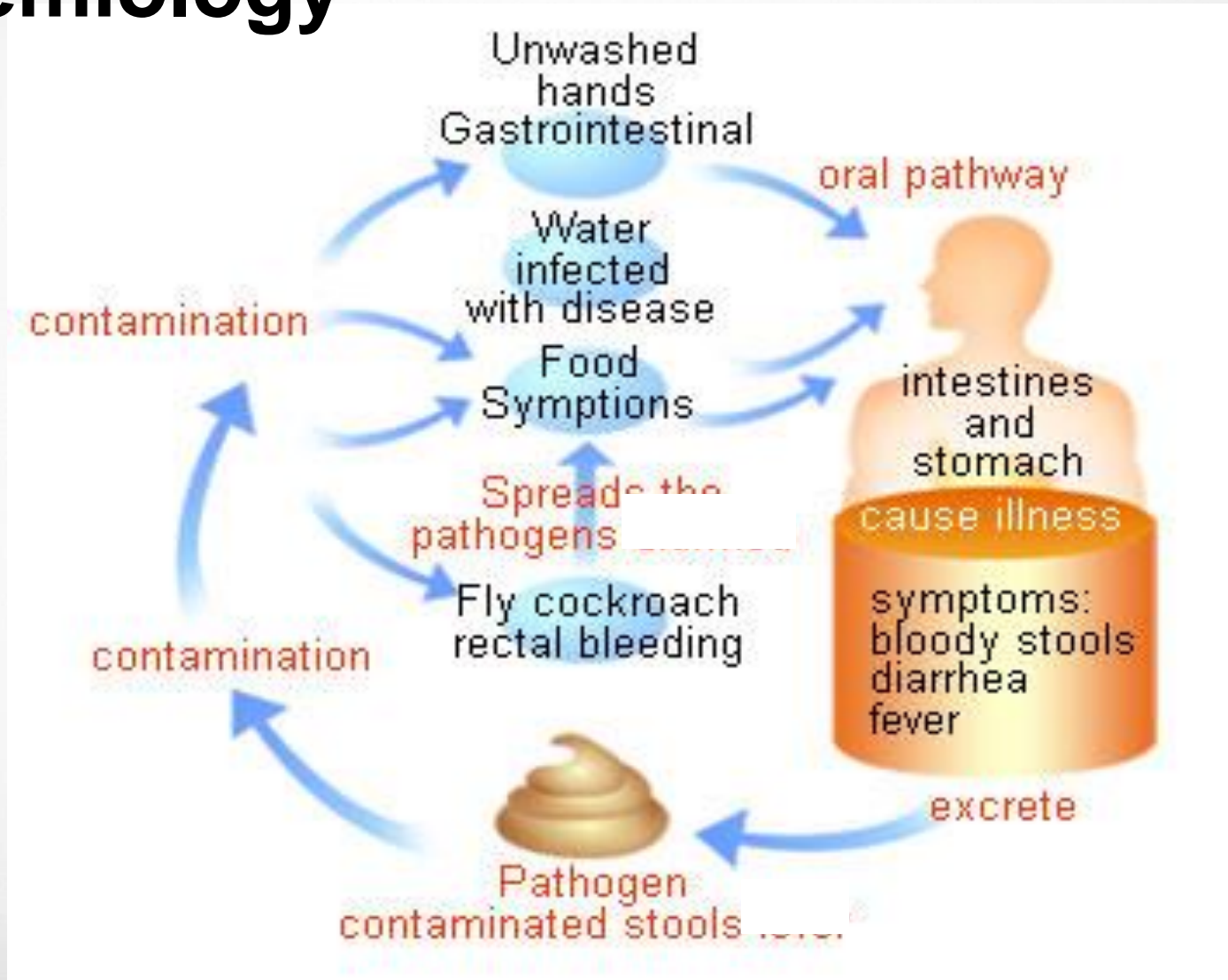


Shigellosis in China





Epidemiology



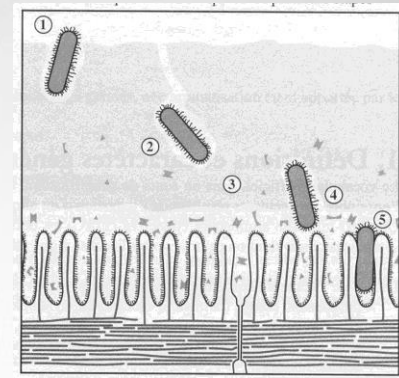


Pathogenesis

(病理机制)

common

Colon(sigmoid colon and rectum)



Bacteria

Penetrate mucus

Normal bacteria flora & slg A

Multiply in epithelia cell
& proper lamina

Prevent attaching

Inflammation
vessel contraction

endotoxin

Endogenous pyrogen

fever

Superficial mucosal in.nec and ulcer

Diarrhea mixed with blood & pus, abdominalache



Pathogenesis toxic

Strong - reaction to endotoxin



norepinephrine - adrenaline↑



Micro-circulatory failure



**Shock, DIC, cerebral edema
cerebral hernia, MOF**



Pathogenesis

Gross pathology

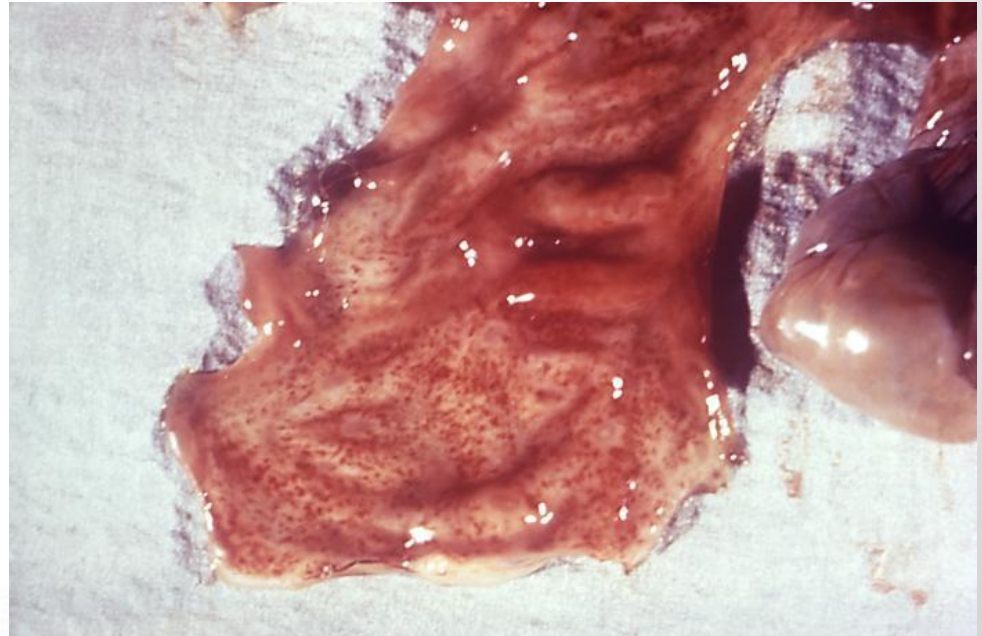
mucosal edema

erythema

friability

superficial ulcers

focal mucosal hemorrhage

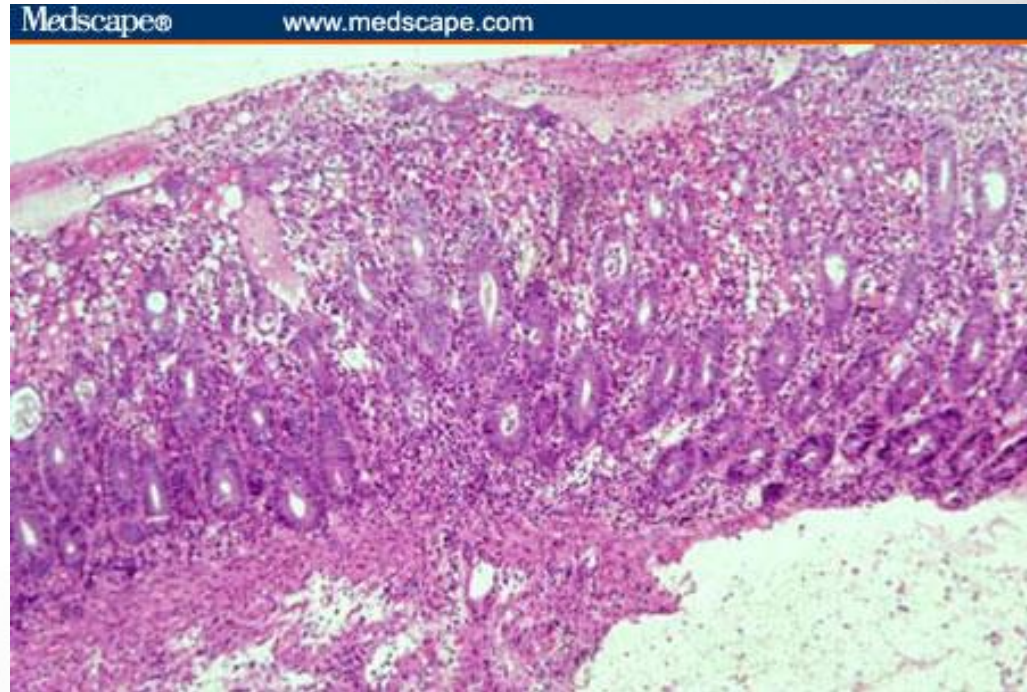




Pathogenesis

Microscopic pathology

epithelial cell necrosis
goblet cell depletion
polymorph & mononuclear
cell infiltrates in lamina
propria
crypt abscess formation.





Clinical manifestations (临床表现)

Bacterial

- Infecting species /serotype
- Virulence
- Amount

Host

- Age
- Immunologic status
- Nutritional status of the host



Clinical Types

Acute dysentery(急性菌痢)

- Common type (普通型)
- Mild type (轻型)
- Severe type (重型)
- Toxic type (中毒型)

Chronic desentery (慢性菌痢) : last > 2 months

- Acute attack type (急性发作型)
- Chronic delayed type (慢性迁延型)
- Chronic obscure type (慢性隐匿型)



Clinical manifestations

Basic clinical manifestation

- (1) watery diarrhea** associated with vomiting and mild to moderate dehydration
- (2) dysentery** characterized by a small volume of **bloody, mucoid stools, and abdominal pain** (cramps and tenesmus)



Clinical manifestations

Acute dysentery – common type

- **sudden onset of shiver, high fever, malaise and anorexia**
- **diarrhea: watery diarrhea or mixed with blood, mucus& pus**
- **abdominal pain (tenesmus and cramps)**
- **Fecal incontinence may occur.**



Clinical manifestations

Acute dysentery – mild type

- caused by *S. sonnei*
- low fever or no fever
- Abdominal pain is mild
- stool mixed with mucus, without blood & pus



Clinical manifestations

Acute dysentery – severe type

- occurs in old, weak, malnutrition people,
- high fever
- abdominal pain, tenesmus is severe
- diarrhea > 30 /day
- stool mixed with mucus, with blood & pus
- circulatory failure, toxic enteroparalysis



Clinical manifestations

Acute dysentery – toxic type

- Age: 2 to 7 yrs.
- Abrupt onset, high fever, temperature rise to 40°C
- Listlessness, lethargy, convulsion, coma.
- circulatory & respiratory failure
- diarrhea mild or absent at beginning



Clinical manifestations

Major complications

Intestinal

- **toxic megacolon**
- **intestinal perforations**
- **rectal prolapse**

Metabolic

- **hypoglycemia**
- **hyponatremia**
- **dehydration**



Clinical manifestations

Chronic dysentery

- **Acute attack type: same as common acute dysentery**
- **Chronic delayed type: long-time and repeated diarrhea**
- **Chronic obscure type: acute history in 1 year, no symptoms, stool culture or sigmoidoscopy Pos.**



Accessory Examination (辅助检查)

Blood Routine Examination :

- ✓ total WBC: $10 \sim 20 \times 10^9/L$
- neutrophils :shift to the left

Stool examination:

- ✓ direct microscopic exam: WBC, RBC, pus cells or macrophage



Accessory Examination

项目名称	结果	参考值	项目名称
1 白细胞数目	12.56 ↑	4.00~10.00 $10^9/L$	23 血小板压积
2 淋巴细胞数目	2.05	0.80~4.00 $10^9/L$	
3 单核细胞数目	0.46	0.12~1.00 $10^9/L$	
4 中性粒细胞数目	9.52 ↑	2.00~7.00 $10^9/L$	
5 嗜酸粒细胞数目	0.49	0.02~0.50 $10^9/L$	
6 嗜碱粒细胞数目	0.04	0.00~1.00 $10^9/L$	
7 淋巴细胞百分比	16.3 ↓	20.0~40.0 %	
8 单核细胞百分比	3.7	3.0~10.0 %	
9 中性粒细胞百分比	75.8 ↑	50.0~70.0 %	
10 嗜酸粒细胞百分比	3.9	0.5~5.0 %	
11 嗜碱粒细胞百分比	0.3	0.0~1.0 %	
12 红细胞数目	4.12	3.50~5.50 $10^{12}/L$	
13 血红蛋白	118	110~160 g/L	
14 红细胞压积	36.5	35.0~52.0 %	
15 平均红细胞体积	84.5	82.0~95.0 fL	
16 平均红细胞血红蛋白	27.3	27.0~35.0 pg	
17 平均红细胞血红蛋白浓度	323	320~360 g/L	
18 红细胞分布宽度变异系数	13.2	11.5~14.5 %	
19 红细胞分布宽度标准差	37.1 ↓	39.0~46.0 fL	
20 血小板数目	179	100~300 $10^9/L$	
21 平均血小板体积	9.3	7.6~13.2 fL	
22 血小板分布宽度	17.3 ↑	15.0~17.0	

报告时间: 2009-4-21 执行部门: 临检室 检验医师: 1

注: 此检验单结果仅对本次标本有效

科 室: 感染病科
病 床 号:
临床诊断:

The image shows two histograms. The top histogram is labeled 'RBC' and shows a distribution of red blood cells with a peak around 50. The bottom histogram is labeled 'PLT' and shows a distribution of platelets with a peak around 10. The x-axis for both histograms is labeled with values 0, 5, 10, 15, 20.



Accessory Examination

就诊类型: 门诊
病历号: 2007153193
送检医生: 蔡大川

科室: 感染病科
病床号:
临床诊断:

重庆医科大学附属第二医院检验科化验报告单

标本送达: 2009-4-21

NO. 35

性别: 女
科室: 感染病科
病床号:
临床诊断:

年龄: 53 岁
病区:
标本种类: 粪便
备注:

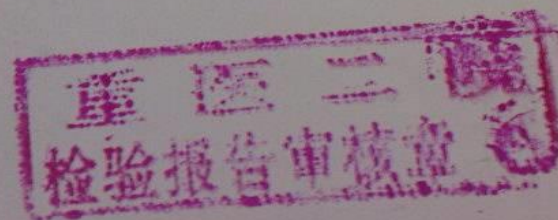
项目名称	结果
1 颜色	黄红色
2 坚度	稀, 粘液状
3 粘液	+++
4 血	无
5 脓	无
6 蛔虫卵	-
7 钩虫卵	-
8 鞭虫卵	-
9 蛲虫卵	-
10 阿米巴活动体	-
11 囊体	-
12 红细胞	4.5

参考值	项目名称	结果	参考值
	13 脓细胞	+++	/HP
	14 巨噬细胞	-	/HP
	15 脂肪球	-	/HP
	16 大便隐血	阳性	
	17 大便暗视野	无特殊发现	

报告时间: 2009-4-21

执行

注: 此检验单结果仅对本次标本有效

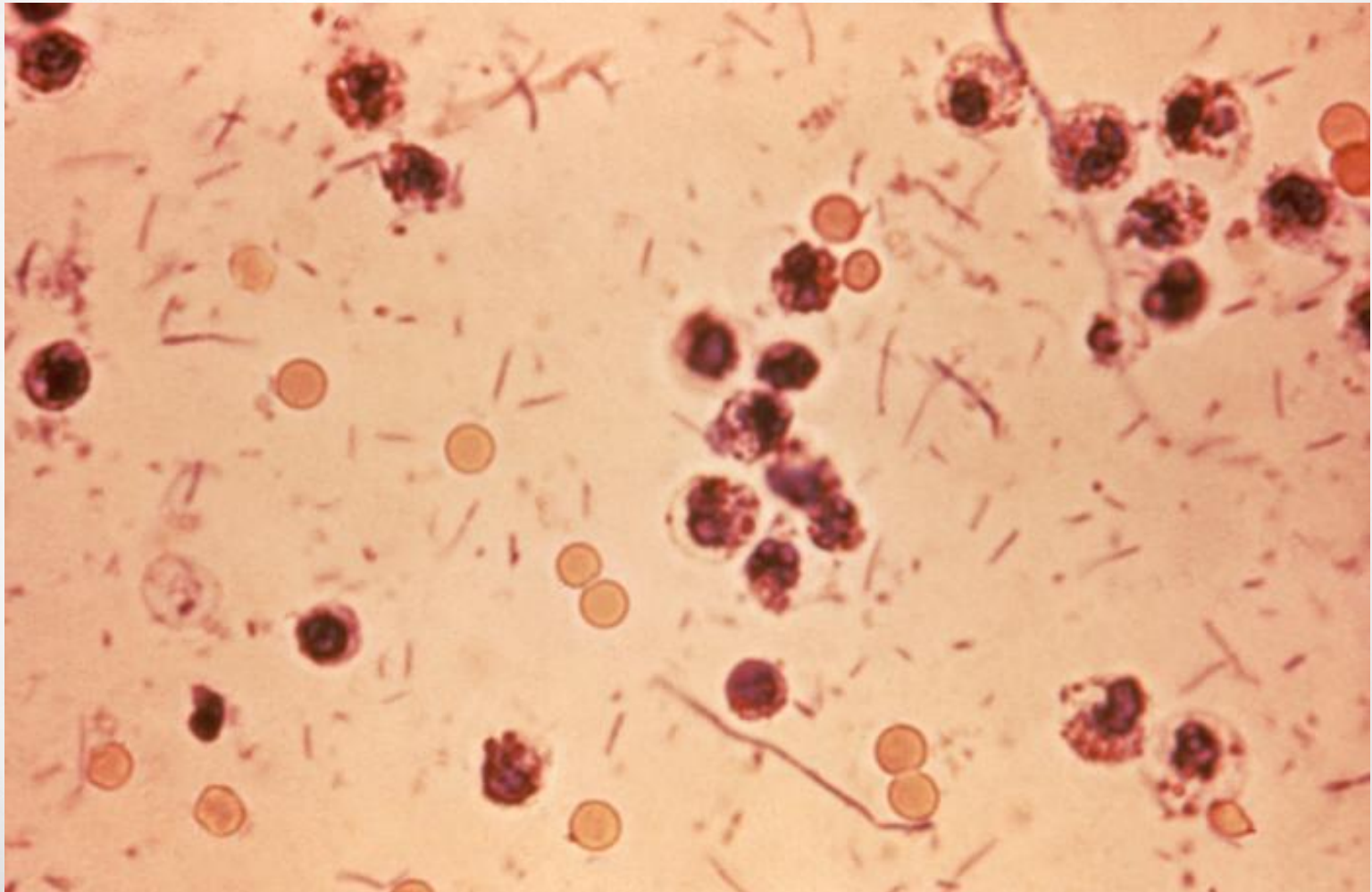


检验医师: 李庄琳

审核者: 叶



Accessory Examination





Accessory Examination

The "gold standard" - stool culture

- Acute phase of disease
- Freshly passed stool
- Blood-tinged plugs of mucus
- Prompt inoculation
- Rectal swabs
- Accredited Technicians



Accessory Examination

Other methods:

PCR

Sigmoidoscopy

X-ray: irrigo-radioscopy



Complications (并发症)

- **bacillus dysenteriae sepsis**
- **hemolytic uremic syndrome (HUS)**
- **reactive arthritis (Reiter's syndrome)**



Diagnosis (诊断)

1. Epidemiologic data and history
2. Clinical features:symptoms and signs
3. Lab findings



Differential Diagnosis(鉴别诊断)

Acute dysentery

- Enteritis caused by *E. Coli*, salmonella, viral diarrhea
- Intussusception: jelly-like stools, abdominal mass and absence of fever
- Amebic dysentery (阿米巴痢疾)



Differential Diagnosis

Bacillary

Amebic

Toxic symptom	severe	mild
diarrhea	severe	mild
tenesmus	noted	no
abdominal tenderness	left	right
stool	blood, mucus, and pus	jam-like , reddish
microscopy	Leukocytes, erythrocytes	Amebic trophozoite
endoscopy	hemorrhagic, with mucous discharge and focal ulcerations	flask-shaped ulcer,



Differential Diagnosis

Toxic dysentery (brain form)

- **Japaness B encephalitis**
 - a. slowly**
 - b. stool**
 - c. CFS-IgM**
 - d. shock rarely**



Differential Diagnosis

Chronic dysentery

- Rectal & colonic carcinoma: no cure for long-term, drop of weight of body
- non-specific ulcer colitis: no cure for long-term, culture of stool is negative, sigmoidoscope: hemorrhage, ulcer, lead pipe.
- Chronic schistosomiasis Japonica
 - a. contact with the disease-water
 - b. hepatomegaly and splenomegaly
 - c. ova of *schistosoma japonicum*



Treatment (治疗)

- **Symptom-based and supportive therapy**
proper rest and diet
correction of isotonic dehydration, metabolic acidosis,
significant potassium loss.
- **ORS (Oral Rehydration Salt)**
- **intravenous fluid replacement**



Treatment

- **Abdominal cramp**
- **Fever**
- **Toxic symptom**



Treatment

Toxic dysentery

hyperpyrexia , convulsion: subhibernation therapy;

- **shock: anti-shock therapy**
- **cerebral edema: dehydration, oxygen**
- **corticosteroids;**



Treatment

Prescription of Antibiotics should be based on

- **severity of disease**
- **age of the patient**
- **likelihood of further transmission of the infection**
- **susceptibility test**

Quinolones, cephalo



Treatment

Others:

- **Compound berberine(黄连素)**
- **Garlic**



Prevention (预防)

- **Control the source of infection:**
proper treatment until negative culture
- **Protect the susceptible**
- **Interruption of the route of transmission:**
avoid fecal contamination of food and water
hand washing after defecation.





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THE SECOND AFFILIATED HOSPITAL
CHONGQING MEDICAL UNIVERSITY

The end