

# TYPHOID FEVER

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Typhoid fever is an acute anthroponotic infectious disease with fecal-oral mechanism of transmission.

It is characterized by cyclic course, prolonged fever, intoxication, typical rash, lesion of the lymphatic apparatus of the small intestine with development clinical symptoms and syndromes.

# ETIOLOGY

- The causative agent is *Salmonella typhi*
- Family – *Enterobacteria*
- Genus – *Salmonella*
- Serological group *D*
- Antigenic Structure.
  - *flagella (H) antigen* – lipopolysaccharide components
  - *somatic (O) antigen* – protein components
  - *Vi antigen* – capsular or virulence antigen



# EPIDEMIOLOGY

***The source of infection*** is a sick man or bacteriocarrier.

***The mechanism of the transmission*** is fecal-oral.

***The routes of the transmission:***

- water
- alimentary
- contact

***The factors of transmission:***

water, milk and milk products, various food-stuff, unwashed fruits and vegetables

Flies play the supplementary role

***Susceptibility*** to agent is high

***Seasonal spread*** – summer-autumn



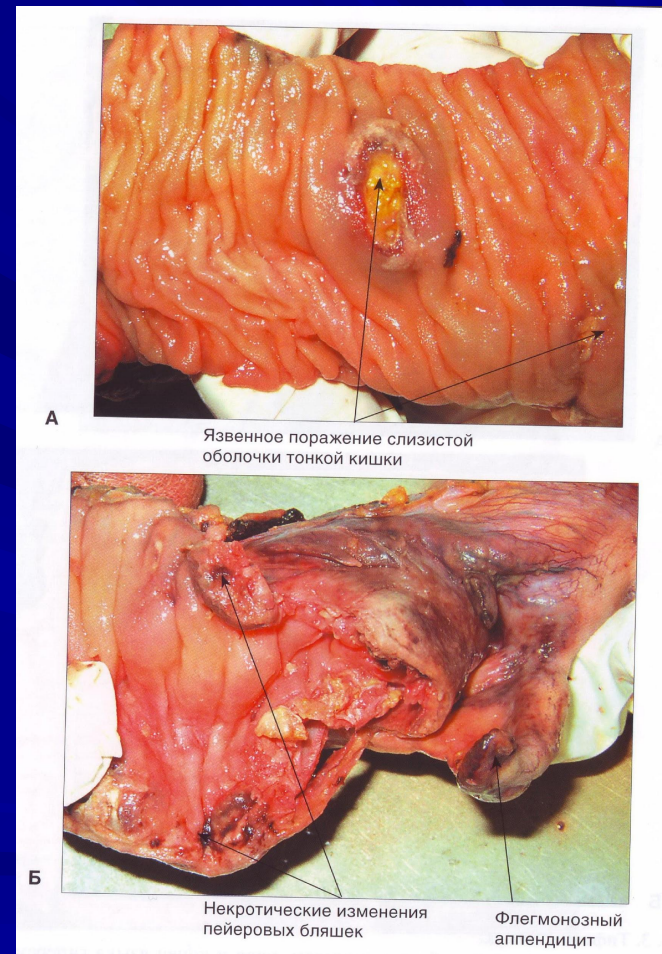
# PATHOGENESIS

The following phases are distinguished in the pathogenesis of typhoid fever:

- Penetration of the causative agent into the organism.
- Development of lymphadenitis and lymphangitis.
- Bacteremia
- Intoxication.
- Parenchymatous diffusion.
- Discharge of the agent from the organism (excretory phase).
- Allergic reaction mainly of the lymphoid tissue of the small intestine
- Formation of immunity.

# ANATOMIC PATHOLOGY

- Sequential changes in the typhoid fever tissue in the ileocecal area of the intestinal tract occur in typhoid fever, they have been classified into four phases:
- hyperplasia (solitary follicles, Peyer's patches);
- necrosis and exfoliation;
- ulceration;
- healing.



# CLINICAL MANIFESTATIONS

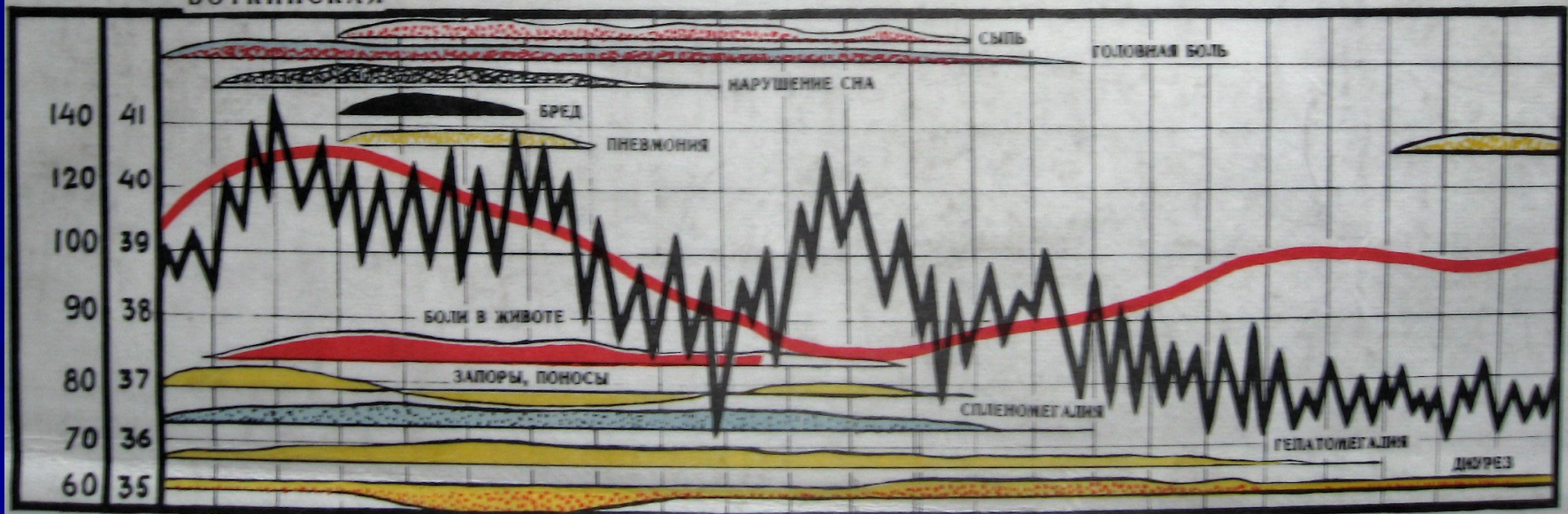
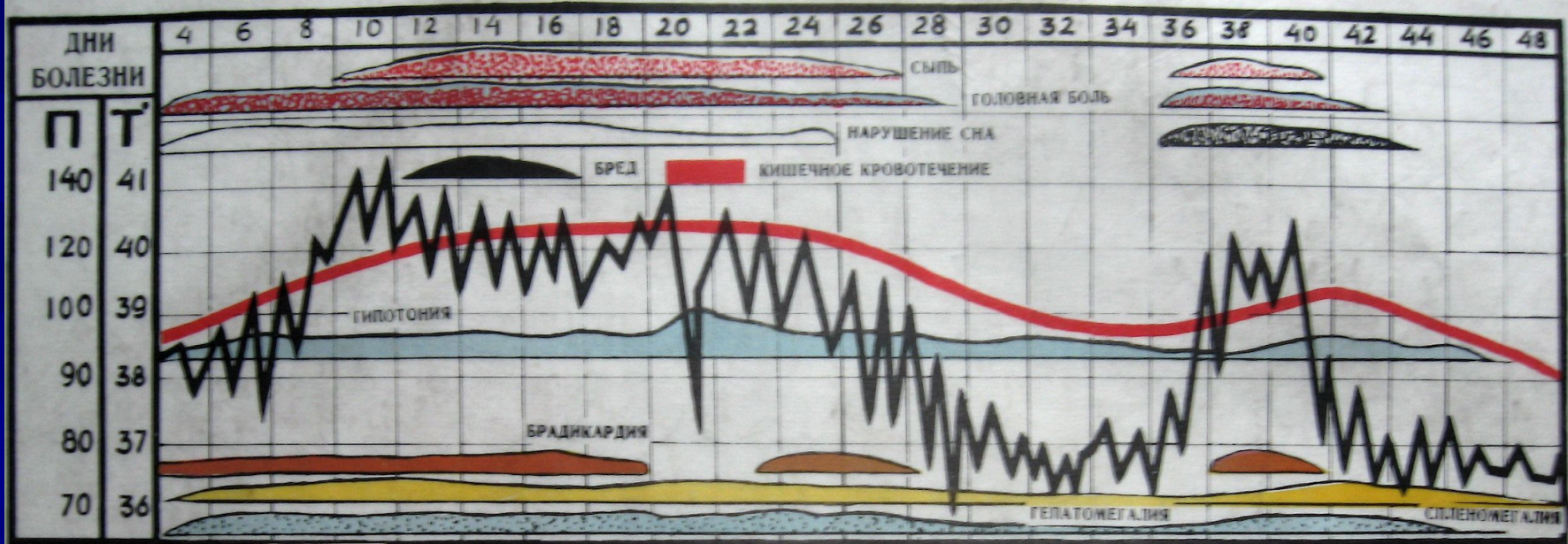
Typhoid fever is characterized by cyclic course:

- incubation period (10-14 days)
- initial period
- period of climax
- reconvalescence and outcomes

## *Initial period*

- fever
- headache
- malaise
- anorexia
- myalgia

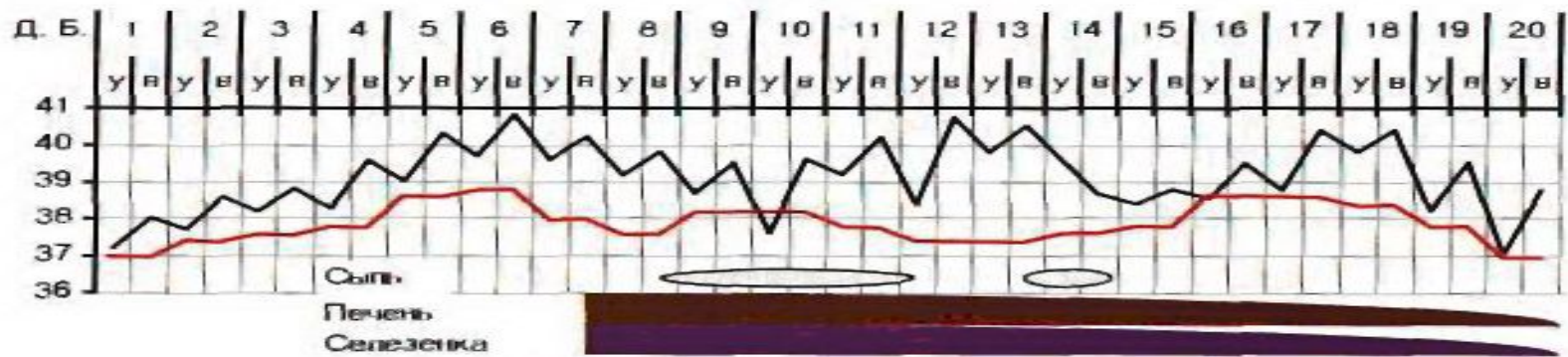
# ТИПЫ ТЕМПЕРАТУРНЫХ КРИВЫХ



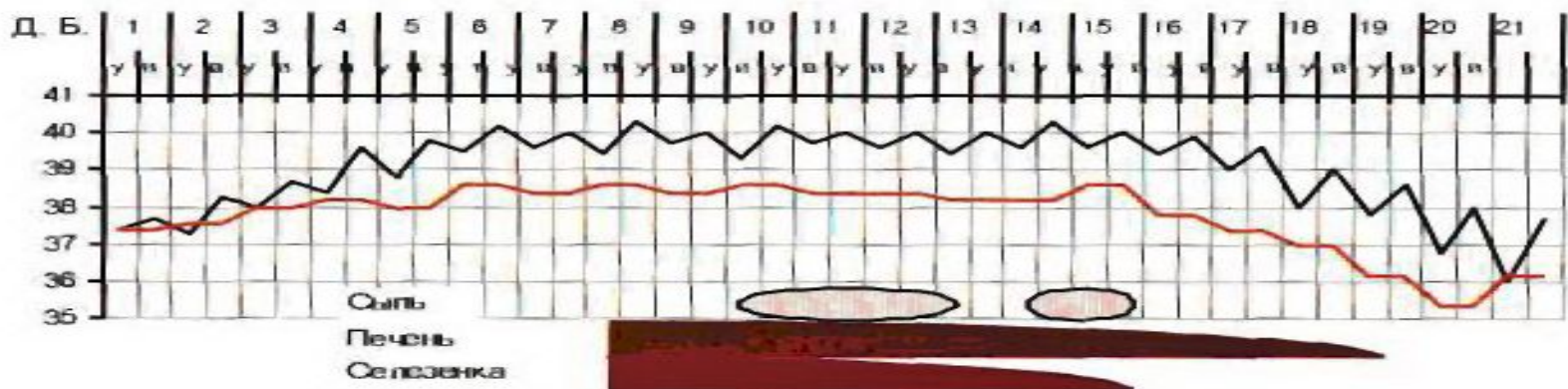
ТРАПЕЦИЕВИДНАЯ



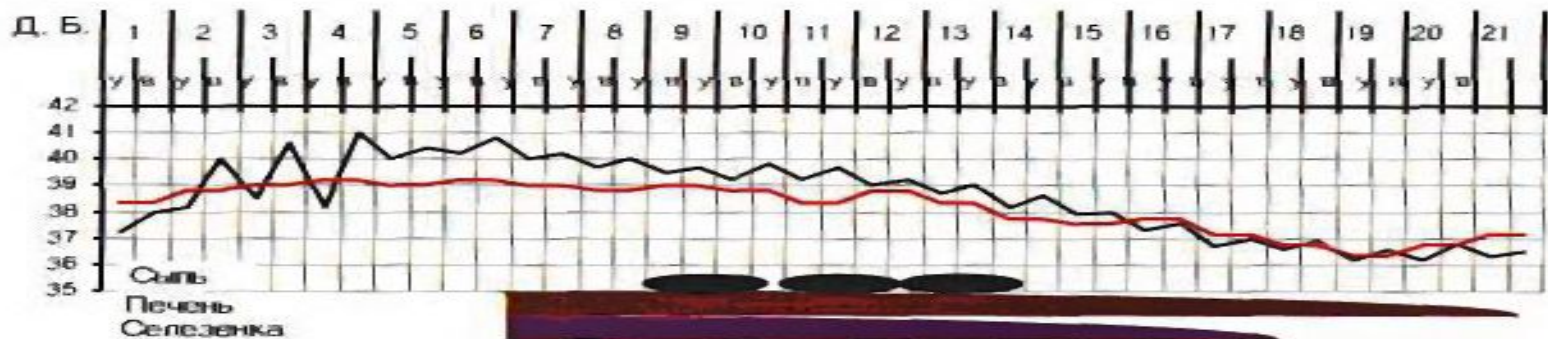
### А. Боткинский тип температурной кривой



### Б. Лихорадка постоянного типа (Вундерлиха)



### В. Температурная кривая типа Кильдешевского





**„ТИФОЗНЫЙ ЯЗЫК“**





# CLINICAL MANIFESTATIONS

## *Period of climax*

- pale skin
- rash
- rose spots;
- type of rash – roseolas that blanch on pressure;
- localization – upper abdomen,
- data of appearance – 8-10th day of the disease)
- **fever** (temperature curve of Wunderlich, of Botkin)
- **cardiovascular symptoms**
- relative bradycardia;
- muffled heart sounds;
- systolic murmur at the heart apex;
- **respiratory symptoms**
- cough;
- sore throat;
- syndrome of **hepatosplenomegaly**
- **damage of gastrointestinal tract**
- diarrhea;
- constipation;
- on percussion short sound is marked in ileocaecal area due to enlarged mesenteric lymphatic nodes (**symptom of Padalka**)





# COMPLICATIONS

## **1. Secondary to toxemia**

- myocarditis
- hyperpyrexia
- hepatic
- bone marrow damage)

## **2. Secondary to local gastrointestinal lesions**

- haemorrhage
- perforation

## **3. Secondary to prolonged severe illness**

- suppurative parotitis decubiti
- pneumonia

## **4. Secondary to growth**

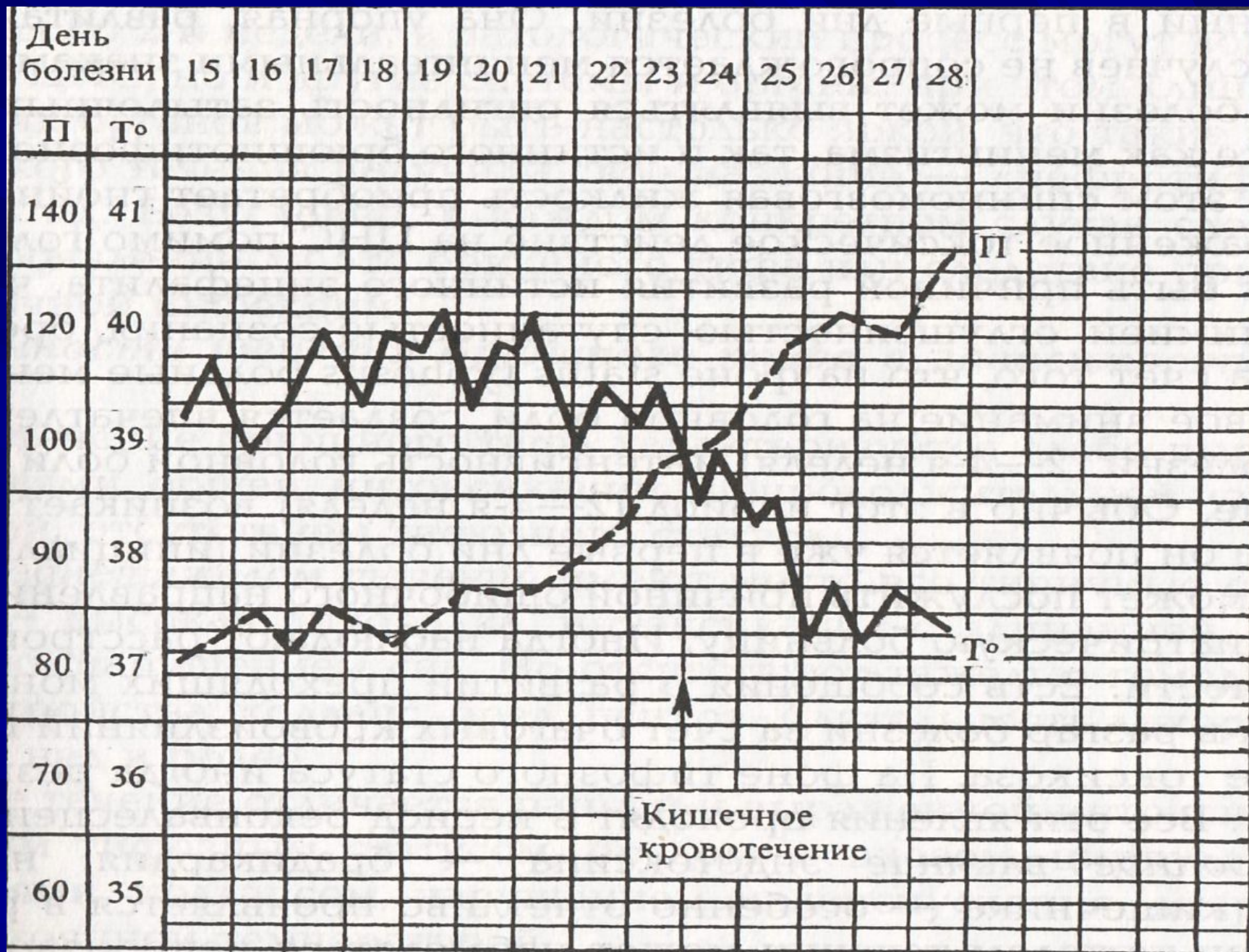
## **5. Persistence of typhoid fever bacilli**

- relapse
- localized infection - meningitis, endocarditis, osteomyelitis or arthritis

## **6. Secondary to therapy**

- bone marrow suppression
- hypersensitive reactions
- toxic shock).





# DIAGNOSTICS

## I. *Blood count*

- leucopenia from the 3rd – 4th day
- lymphocytosis
- aneosinophilia
- thrombocytopenia

## II. *Specific diagnostics*

- Bacteriological methods
- Serological methods (Vidal's test, RIHA)

## III. *Differential diagnostics*

# DIFFERENTIAL DIAGNOSIS

1. influenza and other acute viral diseases of the respiratory tract
2. brucellosis
3. rickettsioses
4. infectious mononucleosis
5. ornithoses
6. pneumonia
7. tuberculosis
8. blood diseases (lymphogranulematosis, leucosis)
9. sepsis
10. generalized form of other salmonellosis

# TREATMENT

I. ***Bed regimen*** (till 6-10 day of the normal temperature)

II. ***Diet (table #2)***

III. ***Etiotropic therapy***

- ***Chloramfenicole*** in dose of 0.5gm 4 times a day (till 7-10 day of the normal temperature)
- ***Alternative remedies*** are bactrim, azitromicin, ciprofloxacin, cefalisporines

III. ***Pathogenetic therapy***

- Desintoxication
- Desensibilization