

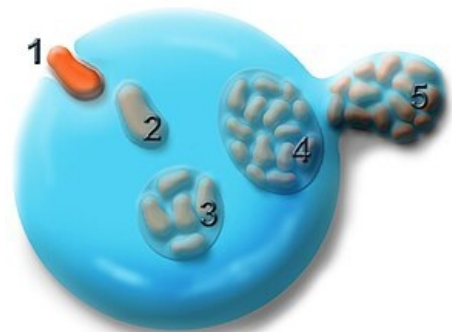
# Ehrlichiosis

**Ehrlichiosis** or **anaplasmosis** is anthrozoosis caused by obligatory intracellular bacteria and transmitted by ticks.

- it is a newly diagnosed disease - previously thought to be infectious to dogs only
- may resemble some forms of Lyme borreliosis
- occurs very rarely in the Czech Republic [1]

## Etiology

- gram-negative bacteria of the genus *Ehrlichia*, in our country *Anaplasma* (formerly *Ehrlichia*) *phagocytophila*
- transmission tick (genus *Ixodes*, *Amblyoma*, *Dermacentor*)
- the morphology of bacteria is variable, usually cocci or cocobacillus
- is located inside leukocytes in membrane-bounded vacuoles, forming intracytoplasmic vacuolar microcolonies called "morulas"[2]

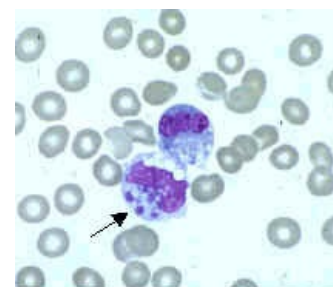


Infection of a cell by Ehrlichia. 1: bacteria entering the cell. 2, 3, 4: reproduction and Morula in the cytoplasm of a neutrophil

## Pathogenesis

Bacteria penetrate:

1. granulocytes - the so-called **human granulocyte ehrlichiosis / anaplasmosis** - **HGE, IGA** - originates of the *Anaplasma phagocytophilum*, transmitted by ticks of the genus *Ixodes*, the reservoir is small mammals, wild animals and horses; co-infection possible *Borrelia burgdorferi*
2. monocytes - **human monocytic ehrlichiosis / anaplasmosis is formed** - **HME, IME** - causative agent *E. chaffeensis*, transmitted by ticks of the genera *Amblyoma* and *Dermacentor*, the reservoir is dogs and wild animals[2]



Intracytoplasmic vacuolar microcolonies of Ehrlichia chaffeensis in leukocytes

## Clinical picture

- **diverse** and non-specific:
  - headache, fatigue, muscle pain, fever, dyspepsia, cough, nausea, (maculopapular rash is present in monocytic ehrlichiosis)
  - internal organ involvement - most often lungs, liver, CNS. [1]

## Diagnostics

- indirect - detection of antibodies by immunofluorescence test (IFA)
- direct - PCR
- in blood count: **leukopenia (especially neutropenia)**, **thrombocytopenia**, sometimes **anemia**
- **elevated liver tests**[2]

## Therapy

- **broad-spectrum antibiotics** - doxycycline, tetracycline, chloramphenicol[2]

## Sources

- BENEŠ, Jiří. *Studijní materiály* [online]. [cit. 2009]. <<http://jirben.wz.cz>>.

## Literature

- Státní zdravotní ústav. *Lidská granulocytární anaplazmóza (HGA)* [online]. ©2020. [cit. 2021-01-18]. <<http://www.szu.cz/tema/prevence/lidska-granulocytarni-anaplazmoza-hga-1>>.
- HAVLÍK, Jiří. *Infektologie*. 2. edition. 1990. ISBN 80-201-0062-8.
- LOBOVSKÁ, Alena. *Infekční nemoci*. 1. edition. 2001. ISBN 80-246-0116-8.

## References

1. BENEŠ, Jiří. *Studijní materiály* [online]. [cit. 2009]. <<http://jirben.wz.cz>>.

2. BARTŮNĚK, P. *Lymeská borelióza* [online] . 3. edition. 2006. pp. 116. Available from <[https://books.google.cz/books/about/Lymesk%C3%A1\\_boreli%C3%B3za.html?id=JE3yhaOOLAgC&hl=cs](https://books.google.cz/books/about/Lymesk%C3%A1_boreli%C3%B3za.html?id=JE3yhaOOLAgC&hl=cs)>.