



BASIC INFORMATION

WHAT IS EHRlichiosis?

- Ehrlichiosis is a bacterial infection that is transmitted by the female Lone star tick called *Amblyomma americanum*
- Though it can affect all ages, it is more likely to occur in elderly
- Most cases of human monocytic ehrlichiosis (HME) are found in southern central states and southeast states, whereas human granulocytic anaplasmosis (HGA) is mostly found in the northeast and upper midwest states
- Ehrlichiosis became a reportable disease to the United States Centers of Disease Control and Prevention (CDC) in 1999

WHAT ARE COMMON SIGNS AND SYMPTOMS?

- Chills
- Confusion
- Cough
- Diarrhea
- Fever
- Headache
- Muscle aches
- Nausea
- Rash

WHAT CAUSES EHRlichiosis?

- There are two types of the human disease
 - Human monocytic ehrlichiosis (HME): caused by *Ehrlichia chaffeensis* and *Ehrlichia ewingii*
 - Human granulocytic anaplasmosis (HGA): caused by *Anaplasma phagocytophilum* (formerly called *Ehrlichia phagocytophilum*)
 - Although there are two different disease processes, and two different infective agents, the clinical manifestations are the same; hence the term "ehrlichiosis" is used for both infection types
- People become infected by the Lone star tick bite, generally in the spring or summer
- Ehrlichiosis does not exhibit person-to-person transmission

WHAT INCREASES MY RISK?

- Geography
 - Living near or spending time in wooded areas or areas with high grass
- Seasonality
 - The majority of cases reported to the CDC have an illness onset during the summer months
 - A peak in cases typically occurs in the summer months of June and July
- Gender
 - Incidence is higher in males than in females
- Age
 - Reported more frequently in adults than in children
- Having a weakened immune system also increases risk

WHAT ARE POSSIBLE COMPLICATIONS?

- In healthy patients, the prognosis is excellent with proper treatment
- Some complications however may occur, especially in patients with a weakened immune system
 - Renal failure
 - Respiratory failure
 - A condition in which the respiratory system exhibits inadequate gas exchange; can cause hypoxemia which is an abnormally low oxygen concentration in the blood
 - Coagulopathy
 - A condition in which the blood's clotting ability is impaired
 - Myocarditis

- Encephalopathy
 - Brain damage or malfunction caused by an agent (toxic or infectious) or other medical condition
- Coma
 - A state of prolonged unconsciousness; a vegetative state
- Death

WHAT CAN I EXPECT?

- Symptoms usually begin 7-14 days after tick bite
- Ehrlichiosis is rarely severe
 - Normally, with antibiotics, patients improve within 24-48 hours where total recovery may take up to 3 weeks

HOW DO I REDUCE MY RISK?

- Avoid dense brush and long grasses
- Check yourself for ticks after being outside
- Wearing protective clothing that cover skin

DIAGNOSIS AND TREATMENT

WHAT GENERAL MEASURES SHOULD I TAKE?

- During outdoor activity, carefully inspect the body frequently to remove ticks
- If ticks are removed within 4 hours, it will reduce the risk of infection
 - Use tweezers to remove a tick
 - Wear latex gloves or cover fingers with a paper towel
 - Grasp tick as close to the skin as possible and pull upward
 - Disinfect the bite site and wash hands with soap and water
 - Save the tick in a plastic bag and keep it in the refrigerator for at least a month (if illness occurs, it may be used to help with diagnosis)
- Activity
 - Bed rest may be ordered by your health care provider
- Diet
 - No specific dietary guidelines have been established for this condition
- To learn more about your condition
 - Centers for Disease Control and Prevention - Ehrlichiosis
 - Phone: (800)-232-4636
 - Website: <http://www.cdc.gov/ehrlichiosis/>

WHAT ARE COMMON LABS AND TESTS?

- A physical examination will be performed to assess your vital signs and to assess your mental status
- Laboratory tests that will likely be ordered include
 - Complete blood count (CBC)
 - Blood smear
 - A test that provides information about the number and shape of blood cells
 - Indirect immunofluorescence assay
 - The gold standard for diagnosing ehrlichiosis
 - This test uses ultraviolet microscopy to identify specific antibodies
 - PCR testing of blood sample
 - PCR stands for polymerase chain reaction
 - This test permits the analysis of genetic material for diagnostic or research purposes

WHAT ARE MY TREATMENT OPTIONS?

- Anti-infective therapy and supportive care
 - Patients with mild disease may be treated on an out-patient basis (at home)
 - Moderate to severe infections require hospital care

WHAT MEDICATIONS MAY BE PRESCRIBED?

- Anti-infective agents that will likely be prescribed include
 - Tetracyclines
 - Anti-tubercular agents
- Antipyretics (medications for fever) may also be prescribed

WHAT CAUTIONS SHOULD I TAKE?

- When removing ticks
 - Do not remove them by squeezing them
 - Do not use petroleum jelly
 - Do not try to burn them off using a match or lighter
- After removal of the tick
 - Make certain the tick head is not embedded
 - Keep the tick in a jar for at least a month in the refrigerator as previously mentioned
 - Cleanse and disinfect the skin

WHEN SHOULD I SEEK MEDICAL HELP?

- If you or a family member develop symptoms of ehrlichiosis

MY HEALTHCARE PROVIDER'S COMMENTS

REFERENCES

- Centers for Disease Control and Prevention. Ehrlichiosis. Available at: <http://www.cdc.gov/ehrlichiosis/> (Accessed on May 4th, 2015)
- U.S. National Library of Medicine website. Ehrlichiosis. Available at: <http://www.nlm.nih.gov/medlineplus/ency/article/001381.htm> (Accessed on May 4th, 2015)

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