

Background

- ❖ Anaplasmosis is an under reported febrile tickborne illness commonly in the Northeastern and Upper Midwestern regions of the US.
- ❖ Under reporting is due to asymptomatic or varied presentation, biased identification of coexisting and prevalent febrile diseases and dearth of specialized confirmatory laboratory tests.
- ❖ Early infection with Anaplasmosis can be effectively and promptly treated.
- ❖ Severe disease can occur in late presentation, especially in the elderly and immunocompromised and may leave long term complications.
- ❖ A high index of suspicion for Anaplasmosis and other tickborne illness in febrile patients is important.

Presentation

63-year-old M current smoker with degenerative joint disease presents to the ER for evaluation of a 3-day history of **fever, chills, severe fatigue, headache, nausea, vomiting, diarrhea, generalized myalgia and arthralgia and low back pain**

Physical Examination

- ❖ Vital signs were remarkable for fever with temperature of 38.4°C.
- ❖ He was alert and oriented, **uncomfortable appearing with chills/rigors**.
- ❖ Palpebral mucosa injection and minimal conjunctival injection.

Investigations

- ❖ Chest x-ray showed clear lungs with normal cardiomeastinal silhouette
- ❖ COVID-19 PCR test was negative
- ❖ CBC revealed relative lymphopenia at 12.6%
- ❖ CMP was significant for elevated ALT (138) and AST (74)
- ❖ Blood cultures had no growth after 5 days. HIV test and hepatitis panel were negative.
- ❖ A right upper quadrant ultrasound showed Cholelithiasis without sonographic evidence of acute cholecystitis or biliary obstruction. HIDA scan ruled out.
- ❖ Malaria/blood parasite smear did not reveal any intra or extracellular parasites in the red blood cells or white blood cells.
- ❖ **Tick borne disease, acute molecular panel was sent, and *Anaplasma Phagocytophilum* DNA detected by PCR**

Clinical Course

- ❖ Fever, generalized body pain and vomiting were managed with Acetaminophen, Ibuprofen, Ketorolac and Ondansetron.
- ❖ Empiric Broad spectrum antibiotics was initiated, and an ID consult was called.
- ❖ After review of labs and imaging studies, antibiotics de-escalated to oral doxycycline pending the result of Tick-borne disease, acute molecular panel.
- ❖ Day 2 of Doxycycline, patient defervesced, chills and vomiting resolved, and myalgia improved.
- ❖ Discharged home to complete a 7-day course of Doxycycline.
- ❖ Four days later, his tickborne disease panel returned positive with ***Anaplasma Phagocytophilum* DNA by PCR**.
- ❖ PCP follow up, symptoms had completely resolved

Discussions

The Human granulocytic anaplasmosis (HGA) is a tickborne illness caused by *Anaplasma Phagocytophilum*, first identified in 1994. HGA infection occurs in the USA, Europe and Asia via exposure to tick bites.

In the US, cases are most common in North-Eastern and upper Midwestern states in the spring and summer months.

Anaplasmosis is an underreported febrile tickborne disease that presents with varied and non-specific symptoms and signs.

Early presentation of illness includes *fever, malaise, headache, myalgia, arthralgia and GI symptoms (nausea, vomiting, diarrhea, anorexia), rash and neurologic symptoms.*

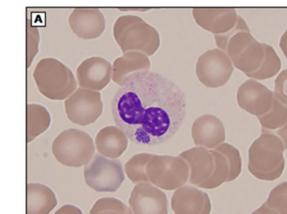
Late illness occurs when treatment is delayed and leads to severe disease including cardiac complications and fatal opportunistic infections, often in the elderly and immunocompromised.

Indirect fluorescent antibody test (IFA) is the standard serologic test for diagnosing A. Phagocytophilum

The drug of choice for treating symptomatic Anaplasmosis is Doxycycline.

A. phagocytophilum infection can be prevented with the use of tick repellents such as DEET or permethrin and prompt examination and removal of ticks. Bathing after outdoor activities is encouraged in endemic areas as well as wearing protective clothing

Early recognition and presumptive treatment based on clinical and epidemiologic features is recommended.



The peripheral smear (1000x, "feather edge") shows morulae of anaplasmosis in the patient's granulocytes. © 2021 UpToDate

REFERENCES: Biggs H Behravesh C, Bradley K, et al Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever and Other Spotted Fever Group Rickettsioses, Ehrlichioses, and Anaplasmosis — United States A Practical Guide for Health Care and Public Health Professionals [Book]. - Atlanta : Center for Surveillance, Epidemiology, and Laboratory Services, Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, 2016. - Vol. 65 : p. 65