A Rare Case of Co-infection of Anaplasmosis and Ehrlichiosis

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Introduction

- Anaplasmosis and Ehrlichiosis are tick-borne illnesses transmitted by the bite of the Black Legged tick (Ixodes scapularis) and Lone Star tick (Figure 2 & 3)
- Co-infections with these two diseases are rare

Case Description

Demographics: 74 year old male with h/o Lyme disease presented with new onset atrial fibrillation. He reported a fever in the evenings with temperatures >100.3°F for two weeks.

Vitals: temp: 99.2°F, HR: 150, irregular, BP: 130/80

Pertinent labs: Pancytopenia, CT abdomen: splenomegaly

Hospital course:
- Non valvular atrial fibrillation resolved with Cardizem
- Fever spikes continued with T max of 102.2°F
- Additional history: Tick bite a few days prior to symptom onset. Outpatient testing: negative Lyme antibody levels; treatment deferred.
- Started empirically on doxycycline and sent for further tests for tick borne illnesses. Test results: positive PCR Anaplasma phagocytophilum and IgM antibody against Ehrlichiosis chaffeensis.
- Fever began to subside and pancytopenia improved
- Discharged on 14 day course of doxycycline

Discussion

- Differentiating factor between Ehrlichiosis and Anaplasmosis is the histological appearance of intra-granulocyte inclusions; neutrophils for Anaplasmosis vs monocytes for Ehrlichiosis
- Anaplasmosis more frequently reported than Ehrlichiosis in the United States, with an average annual incidence of 6.3 cases per million population from 2008 to 2012
- Patients with Anaplasmosis were 10 times more likely to have leukopenia with thrombocytopenia and elevated AST levels. There were more symptoms consisting of headaches, dizziness, myalgias, and anorexia with a direct correlation between symptoms and duration of illness compared to Lyme disease.
- Patients with Anaplasmosis reported prior history of Lyme disease infection (34 % vs 12.9%) when compared to patients with Lyme disease

Conclusion

- This case demonstrates the importance of testing for all tick borne illnesses in endemic areas. (Figure 1)
- A negative Lyme disease workup does not rule out other diseases transmitted by ticks, thus warranting early diagnosis and timely treatment.

References


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