Introduction

Human granulocytic anaplasmosis (HGA) is an increasingly common tickborne infection in the North-East U.S. Statewide incidence of human cases of anaplasmosis in New York (excluding New York City) increased 407% from 2010-2017, with a corresponding increase in *Anaplasma phagocytophilum* prevalence in ticks. While previous observational studies have described the clinical features of HGA, there has been little documentation of HGA diagnosed in the emergency department (ED) setting.

Methods

Demographic and clinical data were extracted from electronic records of cases with a positive polymerase chain reaction (PCR) for HGA or the closely related clinical entity ehrlichiosis from 2016-2017. HGA and ehrlichiosis PCR were performed by the Albany Medical Center laboratory on patients treated in the ED. Descriptive analyses were performed.

Results

During the two-year period, there were 37 cases of PCR-positive HGA and 4 cases of PCR-positive ehrlichiosis treated in the ED. Electronic data were available for extraction for 40 of these cases. Mean age was 54 years old (range 7-94 years). Thirty-four (85%) patients presented with fever, and 9 (23%) reported a tick bite or tick exposure. Twenty-two (55%) patients had leukopenia; 32 (80%) thrombocytopenia; 26 (65%) hyponatremia; 24 (60%) elevated transaminases; 38 (95%) at least one of these laboratory abnormalities; and, 13 (33%) all four laboratory abnormalities. Twenty-four patients (60%) were given the empiric diagnosis of a tickborne illness upon disposition from the ED, with 19 (48%) patients admitted to the hospital.

Conclusions

To our knowledge, this study represents the first description of patients diagnosed with HGA (and ehrlichiosis) in the ED setting. Notably, only 23% of cases reported either a tick bite or tick exposure, highlighting the need to consider this for diagnosis in patients presenting to the ED with consistent symptoms and laboratory findings in endemic areas. Further study is needed to establish the true ED prevalence of HGA in highly endemic regions. Additionally, further study might explore whether there exists a collection of laboratory findings that could accurately identify HGA in ED patients.