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Anaplasmosis 2024 Case Definition | CDC  
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NOTE:  
A surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently across reporting jurisdictions. Surveillance case definitions are not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient’s health needs.  
Subtype(s)  
Anaplasma phagocytophilum  
Background  
Anaplasmosis is a tickborne disease caused by the bacterium  
Anaplasma phagocytophilum  
.  
Ixodes scapularis  
, or the blacklegged tick, is the primary vector in the northeastern and midwestern United States. The western blacklegged tick,  
Ixodes pacificus  
, is the principal vector along the West Coast (1). Anaplasmosis typically presents 5 to 14 days after a tick bite with a combination of nonspecific clinical symptoms, such as fever, fatigue, and headache. Illness is often accompanied by laboratory abnormalities including leukopenia, thrombocytopenia, and mildly elevated liver enzymes (1; 2; 3).  
Clinical Criteria  
Objective clinical evidence  
: fever as reported by patient or healthcare provider, anemia, leukopenia, thrombocytopenia, any hepatic transaminase elevation, or elevated C-reactive protein.  
Subjective clinical evidence  
: chills/sweats, headache, myalgia, or fatigue/malaise.  
Laboratory Criteria  
Confirmatory laboratory evidence:  
Detection of  
A.  
phagocytophilum  
DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay, nucleic acid amplification tests (NAAT), or other molecular testing,  
OR  
Serological evidence of a four-fold change  
1  
in IgG-specific antibody titer to  
A.  
phagocytophilum  
antigen by indirect immunofluorescence assay (IFA) in paired serum samples (one taken in the first two weeks after illness onset  
AND  
a second taken two to ten weeks after acute specimen collection)  
2  
,  
OR  
Demonstration of anaplasmal antigen in a biopsy or autopsy sample by immunohistochemical methods,  
OR  
Isolation of  
A.  
phagocytophilum  
from a clinical specimen in cell culture with molecular confirmation (e.g., PCR or sequencing).  
Presumptive laboratory evidence:  
Serological evidence of elevated IgG antibody reactive with  
A.  
phagocytophilum  
antigen by IFA at a titer ≥1:128 in a sample taken within 60 days of illness onset,  
OR  
Microscopic identification of intracytoplasmic morulae in leukocytes in a sample taken within 60 days of illness onset.  
Note: The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.  
­­  
1  
A four-fold change in titer is equivalent to a change of two dilutions (e.g., 1:64 to 1:256).  
2  
A four-fold rise in titer should not be excluded as confirmatory laboratory criteria if the acute and convalescent specimens are collected within two weeks of one another.  
Criteria to Distinguish a New Case from an Existing Case  
A person previously reported as a probable or confirmed case-patient may be counted as a new case-patient when there is an episode of new clinically compatible illness with confirmatory laboratory evidence.  
Case Classification  
Suspect  
Meets confirmatory or presumptive laboratory evidence with no or insufficient clinical information to classify as a confirmed or probable case (e.g., a laboratory report only).\*  
Probable  
Meets presumptive laboratory evidence with fever as reported by patient or healthcare provider  
AND  
at least one other objective or subjective clinical evidence criterion (excluding chills/sweats),\*  
OR  
Meets presumptive laboratory evidence without a reported fever but with chills/sweats  
AND  
at least one objective clinical evidence criterion,  
OR  
two other subjective clinical evidence criteria.\*  
Confirmed  
Meets confirmatory laboratory evidence  
AND  
at least one of the objective or subjective clinical evidence criteria.\*  
\*Patients should not be classified as cases for both anaplasmosis and ehrlichiosis based on serologic evidence alone  
Comments  
A  
.  
phagocytophilum  
is closely related to  
Ehrlichia  
spp. bacteria, and many patients are tested using serologic panels that include targets for both species. As a result, it is not uncommon for jurisdictions to receive positive antibody results for both  
Anaplasma  
and  
Ehrlichia  
spp. with the same collection date for a single patient. Public health agencies should use a combination of titer levels, information about the location of possible exposures, clinical manifestations, and the incidence of a particular disease in the geographic areas of exposure to help determine the appropriate disease type for individual patients. Patients should not be classified as cases for both anaplasmosis and ehrlichiosis based on serologic evidence alone.  
References  
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NNDSS receives and shares case data from state, local, and territorial health departments to help public health monitor, control, and prevent serious diseases.  
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