

TABLE 147-1 EMPIRICAL TREATMENT FOR COMMON INFECTIOUS DISEASE EMERGENCIES<sup>a</sup>

Clinical Syndrome	Possible Etiologies	Treatment	Comments	See Chap(s).
<b>Sepsis without a Clear Focus</b>				
Septic shock	<i>Pseudomonas</i> spp., gram-negative enteric bacilli, <i>Staphylococcus</i> spp., <i>Streptococcus</i> spp.	Vancomycin (15 mg/kg q12h) <sup>b</sup> plus gentamicin (5 mg/kg per day) <b>plus either</b> Piperacillin/tazobactam (3.375 g q4h) or cefepime (2 g q8h) <sup>c</sup>	Adjust treatment when culture data become available.	172, 173, 186, 189, 325
Overwhelming post-splenectomy sepsis	<i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> , <i>Neisseria meningitidis</i>	Ceftriaxone (2 g q12h) plus vancomycin (15 mg/kg q12h) <sup>b</sup>	If a $\beta$ -lactam-sensitive strain is identified, vancomycin can be discontinued.	325
Babesiosis	<i>Babesia microti</i> (U.S.), <i>B. divergens</i> (Europe)	Clindamycin (600 mg q8h) plus quinine (650 mg q8h)	Atovaquone and azithromycin can be used in less severe disease and are associated with fewer side effects. Treatment with doxycycline (100 mg bid) for potential co-infection with <i>Borrelia burgdorferi</i> or <i>Anaplasma</i> spp. may be prudent.	246e, 249
<b>Sepsis with Skin Findings</b>				
Meningococcemia	<i>N. meningitidis</i>	Penicillin (4 mU q4h) or ceftriaxone (2 g q12h)	Consider protein C replacement, if available, in fulminant meningococcemia. Drotrecogin alfa (activated) is no longer produced.	180
Rocky Mountain spotted fever (RMSF)	<i>Rickettsia rickettsii</i>	Doxycycline (100 mg bid)	If both meningococcemia and RMSF are being considered, use ceftriaxone (2 g q12h) plus doxycycline (100 mg bid). If RMSF is diagnosed, doxycycline is the proven superior agent.	211
Purpura fulminans	<i>S. pneumoniae</i> , <i>H. influenzae</i> , <i>N. meningitidis</i>	Ceftriaxone (2 g q12h) plus vancomycin (15 mg/kg q12h) <sup>b</sup>	If a $\beta$ -lactam-sensitive strain is identified, vancomycin can be discontinued.	171, 180, 182, 325
Erythroderma: toxic shock syndrome	Group A <i>Streptococcus</i> , <i>Staphylococcus aureus</i>	Vancomycin (15 mg/kg q12h) <sup>b</sup> plus clindamycin (600 mg q8h)	If a penicillin- or oxacillin-sensitive strain is isolated, these agents are superior to vancomycin (penicillin, 2 mU q4h; or oxacillin, 2 g IV q4h). The site of toxigenic bacteria should be debrided; IV immunoglobulin can be used in severe cases. <sup>d</sup>	172, 173
<b>Sepsis with Soft Tissue Findings</b>				
Necrotizing fasciitis	Group A <i>Streptococcus</i> , mixed aerobic/anaerobic flora, CA-MRSA <sup>e</sup>	Vancomycin (15 mg/kg q12h) <sup>b</sup> plus clindamycin (600 mg q8h) plus gentamicin (5 mg/kg q8h)	Urgent surgical evaluation is critical. Adjust treatment when culture data become available.	156, 172, 173
Clostridial myonecrosis	<i>Clostridium perfringens</i>	Penicillin (2 mU q4h) plus clindamycin (600 mg q8h)	Urgent surgical evaluation is critical.	179
<b>Neurologic Infections</b>				
Bacterial meningitis	<i>S. pneumoniae</i> , <i>N. meningitidis</i>	Ceftriaxone (2 g q12h) plus vancomycin (15 mg/kg q12h) <sup>b</sup>	If a $\beta$ -lactam-sensitive strain is identified, vancomycin can be discontinued. If the patient is >50 years old or has comorbid disease, add ampicillin (2 g q4h) for <i>Listeria</i> coverage. Dexamethasone (10 mg q6h $\times$ 4 days) improves outcome in adults with meningitis (especially pneumococcal) and cloudy CSF, positive CSF Gram's stain, or a CSF leukocyte count >1000/mL.	164
Brain abscess, suppurative intracranial infections	<i>Streptococcus</i> spp., <i>Staphylococcus</i> spp., anaerobes, gram-negative bacilli	Vancomycin (15 mg/kg q12h) <sup>b</sup> plus metronidazole (500 mg q8h) plus ceftriaxone (2 g q12h)	Urgent surgical evaluation is critical. If a penicillin- or oxacillin-sensitive strain is isolated, these agents are superior to vancomycin (penicillin, 4 mU q4h; or oxacillin, 2 g q4h).	164
Cerebral malaria	<i>Plasmodium falciparum</i>	Artesunate (2.4 mg/kg IV at 0, 12, and 24 h; then once daily) <sup>f</sup> or quinine (IV loading dose of 20 mg salt/kg; then 10 mg/kg q8h)	Do not use glucocorticoids. Use IV quinidine if IV quinine is not available. During IV quinidine treatment, blood pressure and cardiac function should be monitored continuously and blood glucose periodically.	246e, 248
Spinal epidural abscess	<i>Staphylococcus</i> spp., gram-negative bacilli	Vancomycin (15 mg/kg q12h) <sup>b</sup> plus ceftriaxone (2 g q24h)	Surgical evaluation is essential. If a penicillin- or oxacillin-sensitive strain is isolated, these agents are superior to vancomycin (penicillin, 4 mU q4h; or oxacillin, 2 g q4h).	456
<b>Focal Infections</b>				
Acute bacterial endocarditis	<i>S. aureus</i> , $\beta$ -hemolytic streptococci, HACEK group, <sup>g</sup> <i>Neisseria</i> spp., <i>S. pneumoniae</i>	Ceftriaxone (2 g q12h) plus vancomycin (15 mg/kg q12h) <sup>b</sup>	Adjust treatment when culture data become available. Surgical evaluation is essential.	155

<sup>a</sup>These empirical regimens include coverage for gram-positive pathogens that are resistant to  $\beta$ -lactam antibiotics. Local resistance patterns should be considered and may alter the need for empirical vancomycin. <sup>b</sup>A vancomycin loading dose of 20–25 mg/kg can be considered in critically ill patients. <sup>c</sup> $\beta$ -Lactam antibiotics may exhibit unpredictable pharmacodynamics in sepsis. Prolonged or continuous infusions can be considered. <sup>d</sup>The optimal dose of IV immunoglobulin has not been determined, but the median dose in observational studies is 2 g/kg (total dose administered for 1–5 days). <sup>e</sup>Community-acquired methicillin-resistant *S. aureus*. <sup>f</sup>In the United States, artesunate must be obtained through the Centers for Disease Control and Prevention. For patients diagnosed with severe malaria, full doses of parenteral antimalarial treatment should be started with whichever recommended antimalarial agent is first available. <sup>g</sup>*Haemophilus* species, *Aggregatibacter* species, *Cardiobacterium hominis*, *Eikenella corrodens*, and *Kingella kingae*.