TABLE 144-3 CAUSES OF AN EXTREMELY ELEVATED ERYTHROCYTE SEDIMENTATION RATE (>100 mm/h)

Etiologic Category (% of Cases)	Specific Causes
Infectious diseases (35–40)	Subacute bacterial endocarditis
	Abscesses
	Osteomyelitis
	Tuberculosis
	Urinary tract infection
Inflammatory diseases (15–20)	Giant cell arteritis
	Rheumatoid arthritis
	Systemic lupus erythematosus
Malignancies (15–20)	Multiple myeloma
	Leukemias
	Lymphomas
	Carcinomas
Other (20–35)	Drug hypersensitivity reactions (drug fever)
	Ischemic tissue injury/trauma
	Renal diseases

Clostridium tetani, varicella-zoster virus, *Clostridium botulinum* toxin). Although the data suggesting efficacy are limited, IVIG is often used for patients with suspected staphylococcal or streptococcal toxic shock syndrome.

INFECTION CONTROL

When evaluating a patient with a suspected infectious disease, the physician must consider what infection control methods are necessary to prevent transmission of any possible infection to other people. In 2007, the U.S. Centers for Disease Control and Prevention published guidelines for isolation precautions that are available for download at *www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html*. Persons exposed to certain pathogens (e.g., *N. meningitidis*, HIV, *Bacillus anthracis*) should receive postexposure prophylaxis to prevent disease acquisition. (See relevant chapters for details on specific pathogens.)

WHEN TO OBTAIN AN INFECTIOUS DISEASE CONSULT

At times, primary physicians need assistance with patient management, from a diagnostic and/or therapeutic perspective. Multiple studies have demonstrated that an infectious disease consult is associated with positive outcomes for patients with various diseases. For example, in a prospective cohort study of patients with *S. aureus* bacteremia, infectious disease consultation was independently associated with a 56% reduction in 28-day mortality. In addition, infectious disease specialists provide other services (e.g., infection control, antimicrobial stewardship, management of outpatient antibiotic therapy, occupational exposure programs) that have been shown to benefit patients. Whenever such assistance would be advantageous to a patient with a possible infection, the primary physician should opt for an infectious disease consult. Specific situations that might prompt a consult include (1) difficult-to-diagnose patients with presumed infections, (2) patients who are not responding to treatment as expected, (3) patients with a complicated medical history (e.g., organ transplant recipients, patients immunosuppressed due to autoimmune or inflammatory conditions), and (4) patients with "exotic" diseases (i.e., diseases that are not typically seen within the region).

PERSPECTIVE

The study of infectious diseases is really a study of host-bacterial interactions and represents evolution by both the host and the bacteria—an endless struggle in which microbes have generally been more creative and adaptive. Given that nearly one-quarter of deaths worldwide are still related to infectious diseases, it is clear that the war against infectious diseases has not been won. For example, a cure for HIV infection is still lacking, there have been only marginal improvements in the methods for detection and treatment of tuberculosis after more than a half century of research, new infectious diseases (e.g., pandemic influenza, viral hemorrhagic fevers) continue to emerge, and the threat of microbial bioterrorism remains high. The subsequent chapters in Part 8 detail—on both a syndrome and a microbe-by-microbe basis—the current state of medical knowledge about infectious diseases. At their core, all of these chapters carry a similar message: Despite numerous advances in the diagnosis, treatment, and prevention of infectious diseases, much work and research are required before anyone can confidently claim that "all the major infections have disappeared." In reality, this goal will never be attained, given the rapid adaptability of microbes.

TABLE 144-4 TYPICAL CSF PROFILES FOR MENINGITIS AND ENCEPHALITIS[a]

	Normal	Bacterial Meningitis	Viral Meningitis	Fungal Meningitis[b]	Parasitic Meningitis	Tuberculous Meningitis	Encephalitis
WBC count (per μL)	<5	>1000	25–500	40–600	150–2000	25–100	50–500
Differential of WBC	60–70% lymphocytes, ≤30% monocytes/macrophages	↑↑PMNs (≥80%)	Predominantly lymphocytes[c]	Lymphocytes or PMNs, depending on specific organism	↑↑ Eosinophils (≥50%)[d]	Predominantly lymphocytes[c]	Predominantly lymphocytes[c]
Gram's stain	Negative	Positive (in >60% of cases)	Negative	Rarely positive	Negative	Occasionally positive[e]	Negative
Glucose (mg/dL)	40–85	<40	Normal	↓ to normal	Normal	<50 in 75% of cases	Normal
Protein (mg/dL)	15–45	>100	20–80	150–300	50–200	100–200	50–100
Opening pressure (mmH_2O)	50–180	>300	100–350	160–340	Normal	150–280	Normal to ↑
Common causes	—	*Streptococcus pneumoniae*, *Neisseria meningitidis*	Enteroviruses	*Candida*, *Cryptococcus*, and *Aspergillus* spp.	*Angiostrongylus cantonensis*, *Gnathostoma spinigerum*, *Baylisascaris procyonis*	*Mycobacterium tuberculosis*	Herpesviruses, enteroviruses, influenza virus, rabies virus

[a]Numbers indicate typical results, but actual results may vary. [b]Cerebrospinal fluid characteristics depend greatly on the specific organism. [c]Neutrophils may predominate early in the disease course. [d]Patients typically have striking eosinophilia as well. [e]Sensitivity can be increased by examination of a smear of protein coagulum (pellicle) and the use of acid-fast stains.

Abbreviations: PMNs, polymorphonuclear neutrophils; WBC, white blood cell.