

- Spinner MA, Sanchez LA, Hsu AP, et al. GATA2 deficiency: a protean disorder of hematopoiesis, lymphatics and immunity. *Blood* 2014;123:809–821.
- Kalls P, Panzer S, Kletter K, et al. Functional asplenia after bone marrow transplantation. A late complication related to extensive chronic graft-versus-host disease. *Ann Intern Med* 1988;109:461–464.
- National Center for Immunization and Respiratory Diseases. General recommendations on immunization — recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep* 2011;60:1–64.
- Herbers AH, van der Velden WJ, de Haan AF, et al. Impact of palifermin on intestinal mucositis of HSC-T recipients after BEAM. *Bone Marrow Transplant* 2014;49:8–10.
- Gerson SL, Talbot GH, Hurwitz S, et al. Prolonged granulocytopenia: the major risk factor for invasive pulmonary aspergillosis in patients with acute leukemia. *Ann Intern Med* 1984;100:345–351.
- Crippa F, Holmberg L, Carter RA, et al. Infectious complications after autologous CD34-selected peripheral blood stem cell transplantation. *Biol Blood Marrow Transplant* 2002;8:281–289.
- Fukuda T, Boeckh M, Carter RA, et al. Risks and outcomes of invasive fungal infections in recipients of allogeneic hematopoietic stem cell transplants after nonmyeloablative conditioning. *Blood* 2003;102:827–833.
- Nichols WG, Corey L, Gooley T, et al. High risk of death due to bacterial and fungal infection among cytomegalovirus (CMV)-seronegative recipients of stem cell transplants from seropositive donors: evidence for indirect effects of primary CMV infection. *J Infect Dis* 2002;185:273–282.
- Mackall C, Fry T, Gress R, et al. Background to hematopoietic cell transplantation, including post transplant immune recovery. *Bone Marrow Transplant* 2009;44:457–462.
- Klein NC, Go CH, Cunha BA. Infections associated with steroid use. *Infect Dis Clin North Am* 2001;15:423–432, viii.
- Bock SN, Lee RE, Fisher B, et al. A prospective randomized trial evaluating prophylactic antibiotics to prevent triple-lumen catheter-related sepsis in patients treated with immunotherapy. *J Clin Oncol* 1990;8:161–169.
- Sliwowski MX, Mellman I. Antibody therapeutics in cancer. *Science* 2013;341:1192–1198.
- Salvana EM, Salata RA. Infectious complications associated with monoclonal antibodies and related small molecules. *Clin Microbiol Rev* 2009;22:274–290, Table of Contents.
- Cabanillas F, Liboy I, Pavia O, et al. High incidence of non-neutropenic infections induced by rituximab plus fludarabine and associated with hypogammaglobulinemia: a frequently unrecognized and easily treatable complication. *Ann Oncol* 2006;17:1424–1427.
- Gea-Banacloche JC. Rituximab-associated infections. *Semin Hematol* 2010;47:187–198.
- Ozars R, Ar C, Ongoren S, et al. Acute hepatitis B despite a previous high titer of anti-HBs. *Hepatal Int* 2010;4:530–532.
- Carson KR, Evens AM, Richey EA, et al. Progressive multifocal leukoencephalopathy after rituximab therapy in HIV-negative patients: a report of 57 cases from the Research on Adverse Drug Events and Reports project. *Blood* 2009;113:4834–4840.
- Martin-Carrido I, Carmona EM, Specks U, et al. Pneumocystis pneumonia in patients treated with rituximab. *Chest* 2013;144:258–265.
- Martin SI, Marty FM, Fiumara K, et al. Infectious complications associated with alemtuzumab use for lymphoproliferative disorders. *Clin Infect Dis* 2006;43:16–24.
- Srinivasan R, Chakrabarti S, Walsh T, et al. Improved survival in steroid-refractory acute graft versus host disease after non-myeloablative allogeneic transplantation using a daclizumab-based strategy with comprehensive infection prophylaxis. *Br J Haematol* 2004;124:777–786.
- Perales MA, Ishill N, Lomazow WA, et al. Long-term follow-up of patients treated with daclizumab for steroid-refractory acute graft-vs-host disease. *Bone Marrow Transplant* 2007;40:481–486.
- Couriel DR, Saliba R, de Lima M, et al. A phase III study of infliximab and corticosteroids for the initial treatment of acute graft-versus-host disease. *Biol Blood Marrow Transplant* 2009;15:1555–1562.
- Marty FM, Lee SJ, Fahey MM, et al. Infliximab use in patients with severe graft-versus-host disease and other emerging risk factors of non-Candida invasive fungal infections in allogeneic hematopoietic stem cell transplant recipients: a cohort study. *Blood* 2003;102:2768–2776.
- Koo S, Marty FM, Baden LR. Infectious complications associated with immunomodulating biologic agents. *Hematol Oncol Clin North Am* 2011;25:117–138.
- Hoag JB, Azizi A, Doherty TJ, et al. Association of cetuximab with adverse pulmonary events in cancer patients: a comprehensive review. *J Exp Clin Cancer Res* 2009;28:113.
- Bark CM, Traboulsi RS, Honda K, et al. Disseminated Mycobacterium chelonae infection in a patient receiving an epidermal growth factor receptor inhibitor for advanced head and neck cancer. *J Clin Microbiol* 2012;50:194–195.
- de Claro RA, McGinn K, Kwitkowski V, et al. U.S. Food and Drug Administration approval summary: brentuximab vedotin for the treatment of relapsed Hodgkin lymphoma or relapsed systemic anaplastic large-cell lymphoma. *Clin Cancer Res* 2012;18:5845–5849.
- Jalan P, Mahajan A, Pandav V, et al. Brentuximab associated progressive multifocal leukoencephalopathy. *Clin Neurol Neurosurg* 2012;114:1335–1337.
- von Geldern G, Pardo CA, Calabresi PA, et al. PML-IRIS in a patient treated with brentuximab. *Neurology* 2012;79:2075–2077.
- Hapani S, Chu D, Wu S. Risk of gastrointestinal perforation in patients with cancer treated with bevacizumab: a meta-analysis. *Lancet Oncol* 2009;10:559–568.
- Ruiz N, Fernandez-Martos C, Romero I, et al. Invasive fungal infection and nasal septum perforation with bevacizumab-based therapy in advanced colon cancer. *J Clin Oncol* 2007;25:3376–3377.
- Williams J, Lim R, Tambyah P. Invasive aspergillosis associated with bevacizumab, a vascular endothelial growth factor inhibitor. *Int J Infect Dis* 2007;11:549–550.
- Tomblyn M, Chiller T, Einsele H, et al. Guidelines for preventing infectious complications among hematopoietic cell transplantation recipients: a global perspective. *Biol Blood Marrow Transplant* 2009;15:1143–1238.
- Baden LR, Bensinger W, Angarone M, et al. Prevention and treatment of cancer-related infections. *J Natl Compr Canc Netw* 2012;10:1412–1445.
- National Comprehensive Cancer Network. Prevention and Treatment of Cancer-Related Infections V 1.2013. http://www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed May 18, 2014.
- van de Wetering MD, de Witte MA, Kremer LC, et al. Efficacy of oral prophylactic antibiotics in neutropenic afebrile oncology patients: a systematic review of randomised controlled trials. *Eur J Cancer* 2005;41:1372–1382.
- Gafer-Gvili A, Fraser A, Paul M, et al. Meta-analysis: antibiotic prophylaxis reduces mortality in neutropenic patients. *Ann Intern Med* 2005;142:979–995.
- Gafer-Gvili A, Fraser A, Paul M, et al. Antibiotic prophylaxis for bacterial infections in afebrile neutropenic patients following chemotherapy. *Cochrane Database Syst Rev* 2012;1:CD004386.
- Robenshtok E, Gafer-Gvili A, Goldberg E, et al. Antifungal prophylaxis in cancer patients after chemotherapy or hematopoietic stem-cell transplantation: systematic review and meta-analysis. *J Clin Oncol* 2007;25:5471–5489.
- Bucaneve G, Micozzi A, Menichetti F, et al. Levofloxacin to prevent bacterial infection in patients with cancer and neutropenia. *N Engl J Med* 2005;353:977–987.
- Cullen M, Steven N, Billingham L, et al. Antibacterial prophylaxis after chemotherapy for solid tumors and lymphomas. *N Engl J Med* 2005;353:988–998.
- Slavin MA, Lingaratnam S, Mileskin L, et al. Use of antibacterial prophylaxis for patients with neutropenia. Australian Consensus Guidelines 2011 Steering Committee. *Intern Med J* 2011;41:102–109.
- Flowers CR, Seidenfeld J, Bow EJ, et al. Antimicrobial prophylaxis and outpatient management of fever and neutropenia in adults treated for malignancy: American Society of Clinical Oncology Clinical Practice Guideline. *J Clin Oncol* 2013;31:794–810.
- Working Party of the British Committee for Standards in Haematology Clinical Haematology Task Force. Guidelines for the prevention and treatment of infection in patients with an absent or dysfunctional spleen. *BMJ* 1996;312:430–434.
- Segal BH, Almyroudis NG, Battiwalla M, et al. Prevention and early treatment of invasive fungal infection in patients with cancer and neutropenia and in stem cell transplant recipients in the era of newer broad-spectrum antifungal agents and diagnostic adjuncts. *Clin Infect Dis* 2007;44:402–409.
- Goodman JL, Winston DJ, Greenfield RA, et al. A controlled trial of fluconazole to prevent fungal infections in patients undergoing bone marrow transplantation. *N Engl J Med* 1992;326:845–851.
- Slavin MA, Osborne B, Adams R, et al. Efficacy and safety of fluconazole prophylaxis for fungal infections after marrow transplantation—a prospective, randomized, double-blind study. *J Infect Dis* 1995;171:1545–1552.
- Marr KA, Seidel K, White TC, Bowden RA. Candidemia in allogeneic blood and marrow transplant recipients: evolution of risk factors after the adoption of prophylactic fluconazole. *J Infect Dis* 2000;181:309–316.
- Winston DJ, Maziarz RT, Chandrasekar PH, et al. Intravenous and oral itraconazole versus intravenous and oral fluconazole for long-term antifungal prophylaxis in allogeneic hematopoietic stem-cell transplant recipients. A multicenter, randomized trial. *Ann Intern Med* 2003;138:705–713.
- Marr KA, Crippa F, Leisenring W, et al. Itraconazole versus fluconazole for prevention of fungal infections in patients receiving allogeneic stem cell transplants. *Blood* 2004;103:1527–1533.
- van Burik JA, Ratanatharathorn V, Stepan DE, et al. Micafungin versus fluconazole for prophylaxis against invasive fungal infections during neutropenia in patients undergoing hematopoietic stem cell transplantation. *Clin Infect Dis* 2004;39:1407–1416.
- Cornely OA, Maertens J, Winston DJ, et al. Posaconazole vs. fluconazole or itraconazole prophylaxis in patients with neutropenia. *N Engl J Med* 2007;356:348–359.
- Ullmann AJ, Lipton JH, Vesole DH, et al. Posaconazole or fluconazole for prophylaxis in severe graft-versus-host disease. *N Engl J Med* 2007;356:335–347.
- Wingard JR, Carter SL, Walsh TJ, et al. Randomized, double-blind trial of fluconazole versus voriconazole for prevention of invasive fungal infection after allogeneic hematopoietic cell transplantation. *Blood* 2010;116:5111–5118.

55. Ethier MC, Science M, Beyene J, et al. Mould-active compared with fluconazole prophylaxis to prevent invasive fungal diseases in cancer patients receiving chemotherapy or haematopoietic stem-cell transplantation: a systematic review and meta-analysis of randomised controlled trials. *Br J Cancer* 2012; 106:1626–1637.
56. De Pauw BE, Donnelly JP. Prophylaxis and aspergillosis—has the principle been proven? *N Engl J Med* 2007;356:409–411.
57. Marr KA, Leisenring W, Crippa F, et al. Cyclophosphamide metabolism is affected by azole antifungals. *Blood* 2004;103:1557–1559.
58. Moriyama B, Henning SA, Leung J, et al. Adverse interactions between antifungal azoles and vincristine: review and analysis of cases. *Mycoses* 2012;55:290–297.
59. Gea-Banacloche J, Masur H, Arns da Cunha C, et al. Regionally limited or rare infections: prevention after hematopoietic cell transplantation. *Bone Marrow Transplant* 2009;44:489–494.
60. Swaika A, Paulus A, Miller KC, et al. Acyclovir prophylaxis against varicella zoster virus reactivation in multiple myeloma patients treated with bortezomib-based therapies: a retrospective analysis of 100 patients. *J Support Oncol* 2012; 10:155–159.
61. König C, Kleber M, Reinhardt H, et al. Incidence, risk factors, and implemented prophylaxis of varicella zoster virus infection, including complicated varicella zoster virus and herpes simplex virus infections, in lenalidomide-treated multiple myeloma patients. *Ann Hematol* 2014;93:479–484.
62. Boeckh M, Ljungman P. How we treat cytomegalovirus in hematopoietic cell transplant recipients. *Blood* 2009;113:5711–5719.
63. Nichols WC, Price TH, Gooley T, et al. Transfusion-transmitted cytomegalovirus infection after receipt of leukoreduced blood products. *Blood* 2003;101:4195–4200.
64. Winston DJ, Ho WG, Bartoni K, et al. Ganciclovir prophylaxis of cytomegalovirus infection and disease in allogeneic bone marrow transplant recipients. Results of a placebo-controlled, double-blind trial. *Ann Intern Med* 1993;118:179–184.
65. Goodrich JM, Bowden RA, Fisher L, et al. Ganciclovir prophylaxis to prevent cytomegalovirus disease after allogeneic marrow transplant. *Ann Intern Med* 1993;118:173–178.
66. Boeckh M, Gooley TA, Myerson D, et al. Cytomegalovirus pp65 antigenemia-guided early treatment with ganciclovir versus ganciclovir at engraftment after allogeneic marrow transplantation: a randomized double-blind study. *Blood* 1996;88:4063–4071.
67. Einsele H, Reusser P, Bornhauser M, et al. Oral valganciclovir leads to higher exposure to ganciclovir than intravenous ganciclovir in patients following allogeneic stem cell transplantation. *Blood* 2006;107:3002–3008.
68. European Association for the Study of the Liver. EASL clinical practice guidelines: Management of chronic hepatitis B virus infection. *J Hepatol* 2012;57:167–185.
69. Melisko ME, Fox R, Venook A. Reactivation of hepatitis C virus after chemotherapy for colon cancer. *Clin Oncol (R Coll Radiol)* 2004;16:204–205.
70. Mahale P, Kontoyannis DP, Chemaly RF, et al. Acute exacerbation and reactivation of chronic hepatitis C virus infection in cancer patients. *J Hepatol* 2012;57:1177–1185.
71. Pfefferle S, Frickmann H, Gabriel M, et al. Fatal course of an autochthonous hepatitis E virus infection in a patient with leukemia in Germany. *Infection* 2012;40:451–454.
72. Kamar N, Selves J, Mansuy JM, et al. Hepatitis E virus and chronic hepatitis in organ-transplant recipients. *N Engl J Med* 2008;358:811–817.
73. Versluis J, Pas SD, Agteresch HJ, et al. Hepatitis E virus: an underestimated opportunistic pathogen in recipients of allogeneic hematopoietic stem cell transplantation. *Blood* 2013;122:1079–1086.
74. Freifeld AG, Bow EJ, Sepkowitz KA, et al. Clinical practice guideline for the use of antimicrobial agents in neutropenic patients with cancer: 2010 update by the infectious diseases society of america. *Clin Infect Dis* 2011;52: e56–e93.
75. Schimpff S, Satterlee W, Young VM, et al. Empiric therapy with carbenicillin and gentamicin for febrile patients with cancer and granulocytopenia. *N Engl J Med* 1971;284:1061–1065.
76. Averbuch D, Orasch C, Cordonnier C, et al. European guidelines for empirical antibacterial therapy for febrile neutropenic patients in the era of growing resistance: summary of the 2011 4th European Conference on Infections in Leukemia. *Haematologica* 2013;98:1826–1835.
77. Lehrnbecher T, Phillips R, Alexander S, et al. Guideline for the management of fever and neutropenia in children with cancer and/or undergoing hematopoietic stem-cell transplantation. *J Clin Oncol* 2012;30:4427–4438.
78. Klastersky J, Paesmans M, Rubenstein EB, et al. The Multinational Association for Supportive Care in Cancer risk index: A multinational scoring system for identifying low-risk febrile neutropenic cancer patients. *J Clin Oncol* 2000;18:3038–3051.
79. Klastersky J, Paesmans M. The Multinational Association for Supportive Care in Cancer (MASCC) risk index score: 10 years of use for identifying low-risk febrile neutropenic cancer patients. *Support Care Cancer* 2013;21:1487–1495.
80. Freifeld A, Marchigiani D, Walsh T, et al. A double-blind comparison of empirical oral and intravenous antibiotic therapy for low-risk febrile patients with neutropenia during cancer chemotherapy. *N Engl J Med* 1999;341: 305–311.
81. Kern WV, Marchetti O, Drgona L, et al. Oral antibiotics for fever in low-risk neutropenic patients with cancer: a double-blind, randomized, multicenter trial comparing single daily moxifloxacin with twice daily ciprofloxacin plus amoxicillin/clavulanic acid combination therapy—EORTC infectious diseases group trial XV. *J Clin Oncol* 2013;31:1149–1156.
82. Bow EJ. Neutropenic fever syndromes in patients undergoing cytotoxic therapy for acute leukemia and myelodysplastic syndromes. *Semin Hematol* 2009;46:259–268.
83. Gea-Banacloche J. Evidence-based approach to treatment of febrile neutropenia in hematologic malignancies. *Hematology Am Soc Hematol Educ Program* 2013;2013:414–422.
84. Paul M, Yahav D, Bivas A, et al. Anti-pseudomonal beta-lactams for the initial, empirical, treatment of febrile neutropenia: comparison of beta-lactams. *Cochrane Database Syst Rev* 2010:CD005197.
85. Furno P, Bucaneve G, Del Favero A. Monotherapy or aminoglycoside-containing combinations for empirical antibiotic treatment of febrile neutropenic patients: a meta-analysis. *Lancet Infect Dis* 2002;2:231–242.
86. Paul M, Soares-Weiser K, Leibovici L. Beta lactam monotherapy versus beta lactam-aminoglycoside combination therapy for fever with neutropenia: systematic review and meta-analysis. *BMJ* 2003;326:1111.
87. Jaksic B, Martinelli G, Perez-Oteyza J, et al. Efficacy and safety of linezolid compared with vancomycin in a randomized, double-blind study of febrile neutropenic patients with cancer. *Clin Infect Dis* 2006;42:597–607.
88. Pizzo PA, Robichaud KJ, Gill FA, et al. Duration of empiric antibiotic therapy in granulocytopenic patients with cancer. *Am J Med* 1979;67:194–200.
89. Chang HY, Rodriguez V, Narboni G, et al. Causes of death in adults with acute leukemia. *Medicine (Baltimore)* 1976;55:259–268.
90. Aisner J, Wiernik PH, Schimpff SC. Treatment of invasive aspergillosis: relation of early diagnosis and treatment to response. *Ann Intern Med* 1977;86:539–543.
91. Stein RS, Kayser J, Flexner JM. Clinical value of empirical amphotericin B in patients with acute myelogenous leukemia. *Cancer* 1982;50:2247–2251.
92. Pizzo PA, Robichaud KJ, Gill FA, et al. Empiric antibiotic and antifungal therapy for cancer patients with prolonged fever and granulocytopenia. *Am J Med* 1982;72:101–111.
93. Empiric antifungal therapy in febrile granulocytopenic patients. EORTC International Antimicrobial Therapy Cooperative Group. *Am J Med* 1989; 86:668–672.
94. Walsh TJ, Finberg RW, Arndt C, et al. Liposomal amphotericin B for empirical therapy in patients with persistent fever and neutropenia. National Institute of Allergy and Infectious Diseases Mycoses Study Group. *N Engl J Med* 1999;340:764–771.
95. Walsh TJ, Tepler H, Donowitz GR, et al. Caspofungin versus liposomal amphotericin B for empirical antifungal therapy in patients with persistent fever and neutropenia. *N Engl J Med* 2004;351:1391–1402.
96. Maertens JA, Madero L, Reilly AF, et al. A randomized, double-blind, multicenter study of caspofungin versus liposomal amphotericin B for empiric antifungal therapy in pediatric patients with persistent fever and neutropenia. *Pediatr Infect Dis J* 2010;29:415–420.
97. Walsh TJ, Pappas P, Winston DJ, et al. Voriconazole compared with liposomal amphotericin B for empirical antifungal therapy in patients with neutropenia and persistent fever. *N Engl J Med* 2002;346:225–234.
98. Cordonnier C, Pautas C, Maury S, et al. Empirical versus preemptive antifungal therapy for high-risk, febrile, neutropenic patients: a randomized, controlled trial. *Clin Infect Dis* 2009;48:1042–1051.
99. Schneider T, Halter J, Heim D, et al. Pre-emptive diagnosis and treatment of fungal infections—evaluation of a single-centre policy. *Clin Microbiol Infect* 2012;18:189–194.
100. Maschmeyer G, Heinz WJ, Hertenstein B, et al. Immediate versus deferred empirical antifungal (IDEA) therapy in high-risk patients with febrile neutropenia: a randomized, double-blind, placebo-controlled, multicenter study. *Eur J Clin Microbiol Infect Dis* 2013;32:679–689.
101. Aguilar-Guisado M, Martín-Peña A, Espigado I, et al. Universal antifungal therapy is not needed in persistent febrile neutropenia: a tailored diagnostic and therapeutic approach. *Haematologica* 2012;97:464–471.
102. Akova M, Paesmans M, Calandra T, et al. A European Organization for Research and Treatment of Cancer-International Antimicrobial Therapy Group Study of secondary infections in febrile, neutropenic patients with cancer. *Clin Infect Dis* 2005;40:239–245.
103. Miceli MH, Maertens J, Buvé K, et al. Immune reconstitution inflammatory syndrome in cancer patients with pulmonary aspergillosis recovering from neutropenia: Proof of principle, description, and clinical and research implications. *Cancer* 2007;110:112–120.
104. Spitzer TR. Engraftment syndrome following hematopoietic stem cell transplantation. *Bone Marrow Transplant* 2001;27:893–895.
105. Commers JR, Robichaud KJ, Pizzo PA. New pulmonary infiltrates in granulocytopenic cancer patients being treated with antibiotics. *Pediatr Infect Dis* 1984;3:423–428.
106. Pappas PG, Kauffman CA, Andes D, et al. Clinical practice guidelines for the management of candidiasis: 2009 update by the Infectious Diseases Society of America. *Clin Infect Dis* 2009;48:503–535.
107. Walsh TJ, Anaissie EJ, Denning DW, et al. Treatment of aspergillosis: Clinical practice guidelines of the Infectious Diseases Society of America. *Clin Infect Dis* 2008;46:327–360.

108. Nucci M, Anaissie E. Should vascular catheters be removed from all patients with candidemia? An evidence-based review. *Clin Infect Dis* 2002;34:591–599.
109. Walsh TJ, Gamaletsou MN. Treatment of fungal disease in the setting of neutropenia. *Hematology Am Soc Hematol Educ Program* 2013;2013:423–427.
110. Neofytos D, Horn D, Anaissie E, et al. Epidemiology and outcome of invasive fungal infection in adult hematopoietic stem cell transplant recipients: analysis of Multicenter Prospective Antifungal Therapy (PATH) Alliance registry. *Clin Infect Dis* 2009;48:265–273.
111. Upton A, Kirby KA, Carpenter P, et al. Invasive aspergillosis following hematopoietic cell transplantation: outcomes and prognostic factors associated with mortality. *Clin Infect Dis* 2007;44:531–540.
112. Caillot D, Couaillier JF, Bernard A, et al. Increasing volume and changing characteristics of invasive pulmonary aspergillosis on sequential thoracic computed tomography scans in patients with neutropenia. *J Clin Oncol* 2001;19:253–259.
113. Maertens J, Maertens V, Theunissen K, et al. Bronchoalveolar lavage fluid galactomannan for the diagnosis of invasive pulmonary aspergillosis in patients with hematologic diseases. *Clin Infect Dis* 2009;49:1688–1693.
114. Zou M, Tang L, Zhao S, et al. Systematic review and meta-analysis of detecting galactomannan in bronchoalveolar lavage fluid for diagnosing invasive aspergillosis. *PLoS One* 2012;7:e43347.
115. Leeftang MM, Debets-Ossenkopp YJ, Visser CE, et al. Galactomannan detection for invasive aspergillosis in immunocompromised patients. *Cochrane Database Syst Rev* 2008:CD007394.
116. Lamoth F, Cruciani M, Mengoli C, et al. β -Glucan antigenemia assay for the diagnosis of invasive fungal infections in patients with hematologic malignancies: a systematic review and meta-analysis of cohort studies from the Third European Conference on Infections in Leukemia (ECIL-3). *Clin Infect Dis* 2012;54:633–643.
117. De Pauw B, Walsh TJ, Donnelly JP, et al. Revised definitions of invasive fungal disease from the European Organization for Research and Treatment of Cancer/Invasive Fungal Infections Cooperative Group and the National Institute of Allergy and Infectious Diseases Mycoses Study Group (EORTC/MSG) Consensus Group. *Clin Infect Dis* 2008;46:1813–1821.
118. Morrissey CO, Chen SC, Sorrell TC, et al. Galactomannan and PCR versus culture and histology for directing use of antifungal treatment for invasive aspergillosis in high-risk haematology patients: a randomised controlled trial. *Lancet Infect Dis* 2013;13:519–528.
119. Pfeiffer CD, Fine JP, Safdar N. Diagnosis of invasive aspergillosis using a galactomannan assay: a meta-analysis. *Clin Infect Dis* 2006;42:1417–1427.
120. Boonsamsuk V, Niyompattama A, Teosirimongkol C, et al. False-positive serum and bronchoalveolar lavage Aspergillus galactomannan assays caused by different antibiotics. *Scand J Infect Dis* 2010;42:461–468.
121. Nouér SA, Nucci M, Kumar NS, et al. Earlier response assessment in invasive aspergillosis based on the kinetics of serum Aspergillus galactomannan: proposal for a new definition. *Clin Infect Dis* 2011;53:671–676.
122. Herbrecht R, Denning DW, Patterson TF, et al. Voriconazole versus amphotericin B for primary therapy of invasive aspergillosis. *N Engl J Med* 2002;347:408–415.
123. Walsh TJ, Lutsar I, Driscoll T, et al. Voriconazole in the treatment of aspergillosis, scedosporiosis and other invasive fungal infections in children. *Pediatr Infect Dis J* 2002;21:240–248.
124. Cornely OA, Maertens J, Bresnik M, et al. Liposomal amphotericin B as initial therapy for invasive mold infection: a randomized trial comparing a high-loading dose regimen with standard dosing (AmBiLoad trial). *Clin Infect Dis* 2007;44:1289–1297.
125. Greer ND. Posaconazole (Noxafil): a new triazole antifungal agent. *Proc (Bayl Univ Med Cent)* 2007;20:188–196.
126. Walsh TJ, Raad I, Patterson TF, et al. Treatment of invasive aspergillosis with posaconazole in patients who are refractory to or intolerant of conventional therapy: an externally controlled trial. *Clin Infect Dis* 2007;44:2–12.
127. Hope WW, Billaud EM, Lestner J, et al. Therapeutic drug monitoring for triazoles. *Curr Opin Infect Dis* 2008;21:580–586.
128. Maertens J, Raad I, Petrikos G, et al. Efficacy and safety of caspofungin for treatment of invasive aspergillosis in patients refractory to or intolerant of conventional antifungal therapy. *Clin Infect Dis* 2004;39:1563–1571.
129. Roden MM, Zaoutis TE, Buchanan WL, et al. Epidemiology and outcome of zygomycosis: a review of 929 reported cases. *Clin Infect Dis* 2005;41:634–653.
130. Kontoyannis DP, Lionakis MS, Lewis RE, et al. Zygomycosis in a tertiary-care cancer center in the era of Aspergillus-active antifungal therapy: a case-control observational study of 27 recent cases. *J Infect Dis* 2005;191:1350–1360.
131. Kontoyannis DP, Lewis RE. How I treat mucormycosis. *Blood* 2011;118:1216–1224.
132. Walsh TJ, Groll A, Hiemenz J, et al. Infections due to emerging and uncommon medically important fungal pathogens. *Clin Microbiol Infect* 2004;10:48–66.
133. Aapro MS, Bohlius J, Cameron DA, et al. 2010 update of EORTC guidelines for the use of granulocyte-colony stimulating factor to reduce the incidence of chemotherapy-induced febrile neutropenia in adult patients with lymphoproliferative disorders and solid tumours. *Eur J Cancer* 2011;47:8–32.
134. Smith TJ, Khatcheressian J, Lyman GH, et al. 2006 update of recommendations for the use of white blood cell growth factors: an evidence-based clinical practice guideline. *J Clin Oncol* 2006;24:3187–3205.
135. Dekker A, Bulley S, Beyene J, et al. Meta-analysis of randomized controlled trials of prophylactic granulocyte colony-stimulating factor and granulocyte-macrophage colony-stimulating factor after autologous and allogeneic stem cell transplantation. *J Clin Oncol* 2006;24:5207–5215.
136. Renner P, Milazzo S, Liu JP, et al. Primary prophylactic colony-stimulating factors for the prevention of chemotherapy-induced febrile neutropenia in breast cancer patients. *Cochrane Database Syst Rev* 2012;10:CD007913.
137. Gea-Banacloche J. Granulocyte transfusions: where is the controversy? *Cytotherapy* 2011;13:389–390.
138. Wright DG, Robichaud KJ, Pizzo PA, et al. Lethal pulmonary reactions associated with the combined use of amphotericin B and leukocyte transfusions. *N Engl J Med* 1981;304:1185–1189.
139. Quillen K, Wong E, Scheinberg P, et al. Granulocyte transfusions in severe aplastic anemia: an eleven-year experience. *Haematologica* 2009;94:1661–1668.
140. Kim KH, Lim HJ, Kim JS, et al. Therapeutic granulocyte transfusions for the treatment of febrile neutropenia in patients with hematologic diseases: a 10-year experience at a single institute. *Cytotherapy* 2011;13:490–498.
141. Raad II, Chaftari AM, Al Shuaibi MM, et al. Granulocyte transfusions in hematologic malignancy patients with invasive pulmonary aspergillosis: outcomes and complications. *Ann Oncol* 2013;24:1873–1879.
142. Bouza E, Sousa D, Rodríguez-Crèixems M, et al. Is the volume of blood cultured still a significant factor in the diagnosis of bloodstream infections? *J Clin Microbiol* 2007;45:2765–2769.
143. Dunne WM, Nolte FS, Wilson ML, et al. *Blood Cultures III*. Washington, DC: American Society for Microbiology; 1997.
144. Cuellar-Rodriguez J, Connor D, Murray P, et al. Discrepant results from sampling different lumens of multilumen catheters: the case for sampling all lumens. *Eur J Clin Microbiol Infect Dis* 2014;33:831–835.
145. Desjardin JA, Falagas ME, Ruthazer R, et al. Clinical utility of blood cultures drawn from indwelling central venous catheters in hospitalized patients with cancer. *Ann Intern Med* 1999;131:641–647.
146. Mermel LA, Allon M, Bouza E, et al. Clinical practice guidelines for the diagnosis and management of intravascular catheter-related infection: 2009 Update by the Infectious Diseases Society of America. *Clin Infect Dis* 2009;49:1–45.
147. O'Grady NP, Alexander M, Burns LA, et al. Guidelines for the prevention of intravascular catheter-related infections. *Clin Infect Dis* 2011;52:e162–e193.
148. Schiffer CA, Mangu PB, Wade JC, et al. Central venous catheter care for the patient with cancer: American Society of Clinical Oncology clinical practice guideline. *J Clin Oncol* 2013;31:1357–1370.
149. Freire MP, Pierrotti LC, Zerati AE, et al. Infection related to implantable central venous access devices in cancer patients: epidemiology and risk factors. *Infect Control Hosp Epidemiol* 2013;34:671–677.
150. Rinke ML, Bundy DG, Chen AR, et al. Central line maintenance bundles and CLABSI in ambulatory oncology patients. *Pediatrics* 2013;132:e1403–e1412.
151. Mermel LA, Farr BM, Sherertz RJ, et al. Guidelines for the management of intravascular catheter-related infections. *Clin Infect Dis* 2001;32:1249–1272.
152. Press OW, Ramsey PG, Larson EB, et al. Hickman catheter infections in patients with malignancies. *Medicine (Baltimore)* 1984;63:189–200.
153. Blot F, Schmidt E, Nitenberg G, et al. Earlier positivity of central-venous-versus peripheral-blood cultures is highly predictive of catheter-related sepsis. *J Clin Microbiol* 1998;36:105–109.
154. Blot F, Nitenberg G, Chachaty E, et al. Diagnosis of catheter-related bacteraemia: a prospective comparison of the time to positivity of hub-blood versus peripheral-blood cultures. *Lancet* 1999;354:1071–1077.
155. Rijnders BJ, Verwaest C, Peetermans WE, et al. Difference in time to positivity of hub-blood versus nonhub-blood cultures is not useful for the diagnosis of catheter-related bloodstream infection in critically ill patients. *Crit Care Med* 2001;29:1399–1403.
156. Raad I, Hanna HA, Alakech B, et al. Differential time to positivity: a useful method for diagnosing catheter-related bloodstream infections. *Ann Intern Med* 2004;140:18–25.
157. Freeman JT, Elinder-Camburn A, McClymont C, et al. Central line-associated bloodstream infections in adult hematology patients with febrile neutropenia: an evaluation of surveillance definitions using differential time to blood culture positivity. *Infect Control Hosp Epidemiol* 2013;34:89–92.
158. Peterson DE, Bensadoun RJ, Roila F, et al. Management of oral and gastrointestinal mucositis: ESMO Clinical Practice Guidelines. *Ann Oncol* 2011;22:vi78–vi84.
159. Steinberg JP, Robichaux C, Tejedor SC, et al. Distribution of pathogens in central line-associated bloodstream infections among patients with and without neutropenia following chemotherapy: evidence for a proposed modification to the current surveillance definition. *Infect Control Hosp Epidemiol* 2013;34:171–175.
160. Lukenbill J, Rybicki L, Sekeres MA, et al. Defining incidence, risk factors, and impact on survival of central line-associated blood stream infections following hematopoietic cell transplantation in acute myeloid leukemia and myelodysplastic syndrome. *Biol Blood Marrow Transplant* 2013;19:720–724.
161. Digiorgio MJ, Fatica C, Oden M, et al. Development of a modified surveillance definition of central line-associated bloodstream infections for patients with hematologic malignancies. *Infect Control Hosp Epidemiol* 2012;33:865–868.

162. See I, Iwamoto M, Allen-Bridson K, et al. Mucosal barrier injury laboratory-confirmed bloodstream infection: results from a field test of a new National Healthcare Safety Network definition. *Infect Control Hosp Epidemiol* 2013;34:769–776.
163. Seifert H, Cornely O, Seggewiss K, et al. Bloodstream infection in neutropenic cancer patients related to short-term nontunneled catheters determined by quantitative blood cultures, differential time to positivity, and molecular epidemiological typing with pulsed-field gel electrophoresis. *J Clin Microbiol* 2003;41:118–123.
164. Rijnders BJ, Peetermans WE, Verwaest C, et al. Watchful waiting versus immediate catheter removal in ICU patients with suspected catheter-related infection: a randomized trial. *Intensive Care Med* 2004;30:1073–1080.
165. Raad I, Kassar R, Ghannam D, et al. Management of the catheter in documented catheter-related coagulase-negative staphylococcal bacteremia: remove or retain? *Clin Infect Dis* 2009;49:1187–1194.
166. Wolf HH, Leithausner M, Maschmeyer G, et al. Central venous catheter-related infections in hematology and oncology: guidelines of the Infectious Diseases Working Party (AGHO) of the German Society of Hematology and Oncology (DGHO). *Ann Hematol* 2008;87:863–876.
167. Schoot RA, van Dalen EC, van Ommen CH, et al. Antibiotic and other lock treatments for tunneled central venous catheter-related infections in children with cancer. *Cochrane Database Syst Rev* 2013;6:CD008975.
168. Rijnders BJ, Van Wijngaerden E, Vandecasteele SJ, et al. Treatment of long-term intravascular catheter-related bacteraemia with antibiotic lock: randomized, placebo-controlled trial. *J Antimicrob Chemother* 2005;55:90–94.
169. Castagnola E, Ginocchio F. Rescue therapy of difficult-to-treat indwelling central venous catheter-related bacteremias in cancer patients: a review for practical purposes. *Expert Rev Anti Infect Ther* 2013;11:179–186.
170. Falagas ME, Vergidis PI. Narrative review: diseases that masquerade as infectious cellulitis. *Ann Intern Med* 2005;142:47–55.
171. Farmakiotis D, Ciurea AM, Cahuayme-Zuniga L, et al. The diagnostic yield of skin biopsy in patients with leukemia and suspected infection. *J Infect* 2013;67:265–272.
172. Anaya DA, Dellinger EP. Necrotizing soft-tissue infection: diagnosis and management. *Clin Infect Dis* 2007;44:705–710.
173. Bodey GP, Rodriguez S, Fainstein V, et al. Clostridial bacteremia in cancer patients. A 12-year experience. *Cancer* 1991;67:1928–1942.
174. Walsh TJ, Melcher GP, Rinaldi MG, et al. Trichosporon beigeli, an emerging pathogen resistant to amphotericin B. *J Clin Microbiol* 1990;28:1616–1622.
175. Boutati EI, Anaissie EJ. Fusarium, a significant emerging pathogen in patients with hematologic malignancy: ten years' experience at a cancer center and implications for management. *Blood* 1997;90:999–1008.
176. Garimella PS, Agarwal R, Katz A. The utility of repeat enzyme immunoassay testing for the diagnosis of Clostridium difficile infection: a systematic review of the literature. *J Postgrad Med* 2012;58:194–198.
177. Seo S, Campbell AP, Xie H, et al. Outcome of respiratory syncytial virus lower respiratory tract disease in hematopoietic cell transplant recipients receiving aerosolized ribavirin: significance of stem cell source and oxygen requirement. *Biol Blood Marrow Transplant* 2013;19:589–596.
178. Waghmare A, Campbell AP, Xie H, et al. Respiratory syncytial virus lower respiratory disease in hematopoietic cell transplant recipients: viral RNA detection in blood, antiviral treatment, and clinical outcomes. *Clin Infect Dis* 2013;57:1731–1741.
179. Maeng SH, Yoo HS, Choi SH, et al. Impact of parainfluenza virus infection in pediatric cancer patients. *Pediatr Blood Cancer* 2012;59:708–710.
180. Srinivasan A, Wang C, Yang J, et al. Parainfluenza virus infections in children with hematologic malignancies. *Pediatr Infect Dis J* 2011;30:855–859.
181. Nichols WC, Corey L, Gooley T, et al. Parainfluenza virus infections after hematopoietic stem cell transplantation: risk factors, response to antiviral therapy, and effect on transplant outcome. *Blood* 2001;98:573–578.
182. Renaud C, Xie H, Seo S, et al. Mortality rates of human metapneumovirus and respiratory syncytial virus lower respiratory tract infections in hematopoietic cell transplantation recipients. *Biol Blood Marrow Transplant* 2013;19:1220–1226.
183. Schlapbach LJ, Agyeman P, Hutter D, et al. Human metapneumovirus infection as an emerging pathogen causing acute respiratory distress syndrome. *J Infect Dis* 2011;203:294–295.
184. Ison MG. Adenovirus infections in transplant recipients. *Clin Infect Dis* 2006;43:331–339.
185. Chow AW, Benninger MS, Brook I, et al. IDSA clinical practice guideline for acute bacterial rhinosinusitis in children and adults. *Clin Infect Dis* 2012;54:e72–e112.
186. Spreghini E, Orlando F, Giannini D, Barchiesi F. In vitro and in vivo activities of posaconazole against zygomycetes with various degrees of susceptibility. *J Antimicrob Chemother* 2010;65:2158–2163.
187. van Burik JA, Hare RS, Solomon HF, et al. Posaconazole is effective as salvage therapy in zygomycosis: a retrospective summary of 91 cases. *Clin Infect Dis* 2006;42:e61–e65.
188. Mandell LA, Wunderink RG, Anzueto A, et al. Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults. *Clin Infect Dis* 2007;44:S27–S72.
189. Murdoch DR. Diagnosis of Legionella infection. *Clin Infect Dis* 2003;36:64–69.
190. Infectious Diseases Society of America. Guidelines for the management of adults with hospital-acquired, ventilator-associated, and healthcare-associated pneumonia. *Am J Respir Crit Care Med* 2005;171:388–416.
191. Masur H, Gill VJ, Ognibene FP, et al. Diagnosis of Pneumocystis pneumonia by induced sputum technique in patients without the acquired immunodeficiency syndrome. *Ann Intern Med* 1988;109:755–756.
192. Clark BD, Vezza PR, Copeland C, et al. Diagnostic sensitivity of bronchoalveolar lavage versus lung fine needle aspirate. *Mod Pathol* 2002;15:1259–1265.
193. Torres HA, Reddy BT, Raad II, et al. Nocardiosis in cancer patients. *Medicine (Baltimore)* 2002;81:388–397.
194. Brown-Elliott BA, Brown JM, Conville PS, et al. Clinical and laboratory features of the Nocardia spp. based on current molecular taxonomy. *Clin Microbiol Rev* 2006;19:259–282.
195. Sepkowitz KA, Brown AE, Armstrong D. Pneumocystis carinii pneumonia without acquired immunodeficiency syndrome. More patients, same risk. *Arch Intern Med* 1995;155:1125–1128.
196. Kovacs JA, Hiemenz JW, Macher AM, et al. Pneumocystis carinii pneumonia: a comparison between patients with the acquired immunodeficiency syndrome and patients with other immunodeficiencies. *Ann Intern Med* 1984;100:663–671.
197. LaRocque RC, Katz JT, Perruzzi P, et al. The utility of sputum induction for diagnosis of Pneumocystis pneumonia in immunocompromised patients without human immunodeficiency virus. *Clin Infect Dis* 2003;37:1380–1383.
198. Lu Y, Ling G, Qiang C, et al. PCR diagnosis of pneumocystis pneumonia: a bivariate meta-analysis. *J Clin Microbiol* 2011;49:4361–4363.
199. Azoulay E, Bergeron A, Chevreton S, et al. Polymerase chain reaction for diagnosing pneumocystis pneumonia in non-HIV immunocompromised patients with pulmonary infiltrates. *Chest* 2009;135:655–661.
200. Karageorgopoulos DE, Qu JM, Korbila IP, et al. Accuracy of β -D-glucan for the diagnosis of Pneumocystis jirovecii pneumonia: a meta-analysis. *Clin Microbiol Infect* 2013;19:39–49.
201. Ljungman P, Griffiths P, Paya C. Definitions of cytomegalovirus infection and disease in transplant recipients. *Clin Infect Dis* 2002;34:1094–1097.
202. Fysh ET, Tremblay A, Feller-Kopman D, et al. Clinical outcomes of indwelling pleural catheter-related pleural infections: an international multicenter study. *Chest* 2013;144:1597–1602.
203. Awaya N, Adachi A, Mori T, et al. Fulminant Epstein-Barr virus (EBV)-associated T-cell lymphoproliferative disorder with hemophagocytosis following autologous peripheral blood stem cell transplantation for relapsed angioimmunoblastic T-cell lymphoma. *Leuk Res* 2006;30:1059–1062.
204. Milpied N, Vasseur B, Parquet N, et al. Humanized anti-CD20 monoclonal antibody (Rituximab) in post transplant B-lymphoproliferative disorder: a retrospective analysis on 32 patients. *Ann Oncol* 2000;11:113–116.
205. Sloas MM, Flynn PM, Kaste SC, et al. Typhlitis in children with cancer: a 30-year experience. *Clin Infect Dis* 1993;17:484–490.
206. Kirkpatrick ID, Greenberg HM. Gastrointestinal complications in the neutropenic patient: characterization and differentiation with abdominal CT. *Radiology* 2003;226:668–674.
207. Lehmbacher T, Marshall D, Gao C, et al. A second look at anorectal infections in cancer patients in a large cancer institute: the success of early intervention with antibiotics and surgery. *Infection* 2002;30:272–276.
208. Barnes SG, Sattler FR, Ballard JO. Perirectal infections in acute leukemia. Improved survival after incision and debridement. *Ann Intern Med* 1984;100:515–518.
209. Sharma P, Kozarek R, Practice Parameters Committee of American College of Gastroenterology. Role of esophageal stents in benign and malignant diseases. *Am J Gastroenterol* 2010;105:258–273, quiz 274.
210. Ray CEJ, Lorenz JM, Burke CT, et al. ACR Appropriateness Criteria radiologic management of benign and malignant biliary obstruction. *J Am Coll Radiol* 2013;10:567–574.
211. Dumonceau JM, Tringali A, Blero D, et al. Biliary stenting: indications, choice of stents and results: European Society of Gastrointestinal Endoscopy (ESGE) clinical guideline. *Endoscopy* 2012;44:277–298.
212. van der Gaag NA, Rauws EA, van Eijck CH, et al. Preoperative biliary drainage for cancer of the head of the pancreas. *N Engl J Med* 2010;362:129–137.
213. Cotton PB, Connor P, Rawls E, et al. Infection after ERCP, and antibiotic prophylaxis: a sequential quality-improvement approach over 11 years. *Gastrointest Endosc* 2008;67:471–475.
214. Paik WH, Park YS, Hwang JH, et al. Palliative treatment with self-expandable metallic stents in patients with advanced type III or IV hilar cholangiocarcinoma: a percutaneous versus endoscopic approach. *Gastrointest Endosc* 2009;69:55–62.
215. Galandi D, Schwarzer G, Bassler D, et al. Ursodeoxycholic acid and/or antibiotics for prevention of biliary stent occlusion. *Cochrane Database Syst Rev* 2002:CD003043.
216. Kulkarni AV, Drake JM, Lamberti-Pasculli M. Cerebrospinal fluid shunt infection: a prospective study of risk factors. *J Neurosurg* 2001;94:195–201.
217. Fulkerson DH, Sivaganesan A, Hill JD, et al. Progression of cerebrospinal fluid cell count and differential over a treatment course of shunt infection. *J Neurosurg Pediatr* 2011;8:613–619.
218. Conen A, Walti LN, Merlo A, et al. Characteristics and treatment outcome of cerebrospinal fluid shunt-associated infections in adults: a retrospective analysis over an 11-year period. *Clin Infect Dis* 2008;47:73–82.

219. Chamberlain MC, Kormanik PA, Barba D. Complications associated with intraventricular chemotherapy in patients with leptomeningeal metastases. *J Neurosurg* 1997;87:694–699.
220. Hill CS, Luoma AM, Wilson SR, et al. Titanium cranioplasty and the prediction of complications. *Br J Neurosurg* 2012;26:832–837.
221. Tunkel AR, Hartman BJ, Kaplan SL, et al. Practice guidelines for the management of bacterial meningitis. *Clin Infect Dis* 2004;39:1267–1284.
222. Tunkel AR, Glaser CA, Bloch KC, et al. The management of encephalitis: clinical practice guidelines by the Infectious Diseases Society of America. *Clin Infect Dis* 2008;47:303–327.
223. Ljungman P, de la Camara R, Cordonnier C, et al. Management of CMV, HHV-6, HHV-7 and Kaposi-sarcoma herpesvirus (HHV-8) infections in patients with hematologic malignancies and after SCT. *Bone Marrow Transplant* 2008;42:227–240.
224. Ogata M, Satou T, Kadota J-I, et al. Human herpesvirus 6 (HHV-6) reactivation and HHV-6 encephalitis after allogeneic hematopoietic cell transplantation: a multicenter, prospective study. *Clin Infect Dis* 2013;57:671–681.
225. Bhanushali MJ, Kranick SM, Freeman AF, et al. Human herpes 6 virus encephalitis complicating allogeneic hematopoietic stem cell transplantation. *Neurology* 2013;80:1494–1500.
226. Sauter A, Ernemann U, Beck R, et al. Spectrum of imaging findings in immunocompromised patients with HHV-6 infection. *Am J Roentgenol* 2009;193:W373–W380.
227. Khalil M, Enzinger C, Wallner-Blazek M, et al. Epstein-Barr virus encephalitis presenting with a tumor-like lesion in an immunosuppressed transplant recipient. *J Neurovirol* 2008;14:574–578.
228. Walsh TJ, Hier DB, Caplan LR. Aspergillosis of the central nervous system: clinicopathological analysis of 17 patients. *Ann Neurol* 1985;18:574–582.
229. Martino R, Bretagne S, Einsele H, et al. Early detection of *Toxoplasma* infection by molecular monitoring of *Toxoplasma gondii* in peripheral blood samples after allogeneic stem cell transplantation. *Clin Infect Dis* 2005;40:67–78.
230. Martino R, Maertens J, Bretagne S, et al. *Toxoplasmosis* after hematopoietic stem cell transplantation. *Clin Infect Dis* 2000;31:1188–1195.
231. Israelski DM, Remington JS. *Toxoplasmosis* in patients with cancer. *Clin Infect Dis* 1993;17:S423–S435.
232. Omuro AM, Leite CC, Mokhtari K, et al. Pitfalls in the diagnosis of brain tumours. *Lancet Neurol* 2006;5:937–948.
233. Mulanovich VE, Ahmed SI, Öztürk T, et al. *Toxoplasmosis* in allo-SCT patients: risk factors and outcomes at a transplantation center with a low incidence. *Bone Marrow Transplant* 2011;46:273–277.
234. Yoshida H, Ohshima K, Toda J, et al. Significant improvement following combination treatment with mefloquine and mirtazapine in a patient with progressive multifocal leukoencephalopathy after allogeneic peripheral blood stem cell transplantation. *Int J Hematol* 2014;99:95–99.
235. Izumi K, Mizokami A, Maeda Y, et al. Current outcome of patients with ureteral stents for the management of malignant ureteral obstruction. *J Urol* 2011;185:556–561.
236. Ramchandani P, Cardella JF, Grassi CJ, et al. Quality improvement guidelines for percutaneous nephrostomy. *J Vasc Interv Radiol* 2003;14:S277–S281.
237. Moon E, Tam MD, Kikano RN, et al. Prophylactic antibiotic guidelines in modern interventional radiology practice. *Semin Intervent Radiol* 2010;27:327–337.
238. Mori K, Yoshihara T, Nishimura Y, et al. Acute renal failure due to adenovirus-associated obstructive uropathy and necrotizing tubulointerstitial nephritis in a bone marrow transplant recipient. *Bone Marrow Transplant* 2003;31:1173–1176.
239. Nagafuji K, Aoki K, Henzan H, et al. Cidofovir for treating adenoviral hemorrhagic cystitis in hematopoietic stem cell transplant recipients. *Bone Marrow Transplant* 2004;34:909–914.
240. Haines HL, Laskin BL, Goebel J, et al. Blood, and not urine, BK viral load predicts renal outcome in children with hemorrhagic cystitis following hematopoietic stem cell transplantation. *Biol Blood Marrow Transplant* 2011;17:1512–1519.
241. O'Donnell PH, Swanson K, Josephson MA, et al. BK virus infection is associated with hematuria and renal impairment in recipients of allogeneic hematopoietic stem cell transplants. *Biol Blood Marrow Transplant* 2009;15:1038–1048.e1.
242. Cesaro S, Hirsch HH, Faraci M, et al. Cidofovir for BK virus-associated hemorrhagic cystitis: a retrospective study. *Clin Infect Dis* 2009;49:233–240.
243. Bow EJ. There should be no ESKAPE for febrile neutropenic cancer patients: the dearth of effective antibacterial drugs threatens anticancer efficacy. *J Antimicrob Chemother* 2013;68:492–495.
244. Sievert DMP, Ricks PP, Edwards JRMS, et al. Antimicrobial-resistant pathogens associated with healthcare-associated infections: summary of data reported to the National Healthcare Safety Network at the Centers for Disease Control and Prevention, 2009–2010. *Infect Control Hosp Epidemiol* 2013;34:1–14.
245. Samonis G, Vardakas KZ, Maraki S, et al. A prospective study of characteristics and outcomes of bacteremia in patients with solid organ or hematologic malignancies. *Support Care Cancer* 2013;21:2521–2526.
246. Feldman N, Adler A, Molshatzki N, et al. Gastrointestinal colonization by KPC-producing *Klebsiella pneumoniae* following hospital discharge: duration of carriage and risk factors for persistent carriage. *Clin Microbiol Infect* 2012;19:E190–E196.
247. Apisathanarak A, Bailey TC, Fraser VJ. Duration of stool colonization in patients infected with extended-spectrum beta-lactamase-producing *Escherichia coli* and *Klebsiella pneumoniae*. *Clin Infect Dis* 2008;46:1322–1323.
248. O'Fallon E, Gautam S, D'Agata EMC. Colonization with multidrug-resistant gram-negative bacteria: prolonged duration and frequent cocolonization. *Clin Infect Dis* 2009;48:1375–1381.
249. Donskey CJ. The role of the intestinal tract as a reservoir and source for transmission of nosocomial pathogens. *Clin Infect Dis* 2004;39:219–226.
250. Bonten MJ, Weinstein RA. The role of colonization in the pathogenesis of nosocomial infections. *Infect Control Hosp Epidemiol* 1996;17:193–200.
251. Samonis G, Koutsounaki E, Karageorgopoulos DE, et al. Empirical therapy with ceftazidime combined with levofloxacin or once-daily amikacin for febrile neutropenia in patients with neoplasia: a prospective comparative study. *Eur J Clin Microbiol Infect Dis* 2012;31:1389–1398.
252. Kang C-I, Chung DR, Ko KS, et al. Risk factors for infection and treatment outcome of extended-spectrum β -lactamase-producing *Escherichia coli* and *Klebsiella pneumoniae* bacteremia in patients with hematologic malignancy. *Ann Hematol* 2012;91:115–121.
253. Huh K, Kang C-I, Kim J, et al. Risk factors and treatment outcomes of bloodstream infection caused by extended-spectrum cephalosporin-resistant *Enterobacter* species in adults with cancer. *Diagn Microbiol Infect Dis* 2014;78:172–177.
254. Taur Y, Xavier JB, Lipuma L, et al. Intestinal domination and the risk of bacteremia in patients undergoing allogeneic hematopoietic stem cell transplantation. *Clin Infect Dis* 2012;55:905–914.
255. Landrum ML, Neumann C, Cook C, et al. Epidemiology of *Staphylococcus aureus* blood and skin and soft tissue infections in the US military health system, 2005–2010. *JAMA* 2012;308:50–59.
256. Kallen AJ, Mu Y, Bulens S, et al. Health care-associated invasive MRSA infections, 2005–2008. *JAMA* 2010;304:641–647.
257. Iwamoto M, Mu Y, Lynfield R, et al. Trends in invasive methicillin-resistant *Staphylococcus aureus* infections. *Pediatrics* 2013;132:e817–e824.
258. Mahajan SN, Shah JN, Hachem R, et al. Characteristics and outcomes of methicillin-resistant *Staphylococcus aureus* bloodstream infections in patients with cancer treated with vancomycin: 9-year experience at a comprehensive cancer center. *Oncologist* 2012;17:1329–1336.
259. Liu C, Bayer A, Cosgrove SE, et al. Clinical practice guidelines by the infectious diseases society of america for the treatment of methicillin-resistant *Staphylococcus aureus* infections in adults and children. *Clin Infect Dis* 2011;52:e18–e55.
260. Harbarth S, Fankhauser C, Schrenzel J, et al. Universal screening for methicillin-resistant *Staphylococcus aureus* at hospital admission and nosocomial infection in surgical patients. *JAMA* 2008;299:1149–1157.
261. Schweizer ML, Herwaldt LA. Surgical site infections and their prevention. *Curr Opin Infect Dis* 2012;25:378–384.
262. Miller LG, Perdreaux-Remington F, Bayer AS, et al. Clinical and epidemiologic characteristics cannot distinguish community-associated methicillin-resistant *Staphylococcus aureus* infection from methicillin-susceptible *S. aureus* infection: a prospective investigation. *Clin Infect Dis* 2007;44:471–482.
263. Appelbaum PC. The emergence of vancomycin-intermediate and vancomycin-resistant *Staphylococcus aureus*. *Clin Microbiol Infect* 2006;12:16–23.
264. Sakoulas G, Moise-Broder PA, Schentag J, et al. Relationship of MIC and bactericidal activity to efficacy of vancomycin for treatment of methicillin-resistant *Staphylococcus aureus* bacteremia. *J Clin Microbiol* 2004;42:2398–2402.
265. Rybak M, Lomaestro B, Rotschafer JC, et al. Therapeutic monitoring of vancomycin in adult patients: a consensus review of the American Society of Health-System Pharmacists, the Infectious Diseases Society of America, and the Society of Infectious Diseases Pharmacists. *Am J Health Syst Pharm* 2009;66:82–98.
266. Wunderink RG, Rello J, Cammarata SK, et al. Linezolid vs vancomycin: analysis of two double-blind studies of patients with methicillin-resistant *Staphylococcus aureus* nosocomial pneumonia. *Chest* 2003;124:1789–1797.
267. Wunderink RG, Niederman MS, Kollef MH, et al. Linezolid in methicillin-resistant *Staphylococcus aureus* nosocomial pneumonia: a randomized, controlled study. *Clin Infect Dis* 2012;54:621–629.
268. Rehm SJ, Boucher H, Levine D, et al. Daptomycin versus vancomycin plus gentamicin for treatment of bacteraemia and endocarditis due to *Staphylococcus aureus*: subset analysis of patients infected with methicillin-resistant isolates. *J Antimicrob Chemother* 2008;62:1413–1421.
269. Fowler VG, Boucher HW, Corey GR, et al. Daptomycin versus standard therapy for bacteraemia and endocarditis caused by *Staphylococcus aureus*. *N Engl J Med* 2006;355:653–665.
270. Kamboj M, Chung D, Seo SK, et al. The changing epidemiology of vancomycin-resistant *Enterococcus* (VRE) bacteremia in allogeneic hematopoietic stem cell transplant (HSCT) recipients. *Biol Blood Marrow Transplant* 2010;16:1576–1581.
271. Ubeda C, Taur Y, Jenq RR, et al. Vancomycin-resistant *Enterococcus* domination of intestinal microbiota is enabled by antibiotic treatment in mice and precedes bloodstream invasion in humans. *J Clin Invest* 2010;120:4332–4341.
272. Weinstock DM, Conlon M, Iovino C, et al. Colonization, bloodstream infection, and mortality caused by vancomycin-resistant *enterococcus* early after allogeneic hematopoietic stem cell transplant. *Biol Blood Marrow Transplant* 2007;13:615–621.

273. Casapao AM, Kullar R, Davis SL, et al. Multicenter study of high-dose daptomycin for treatment of enterococcal infections. *Antimicrob Agents Chemother* 2013;57:4190–4196.
274. Raad I, Hachem R, Hanna H, et al. Prospective, randomized study comparing quinupristin-dalfopristin with linezolid in the treatment of vancomycin-resistant *Enterococcus faecium* infections. *J Antimicrob Chemother* 2004;53:646–649.
275. Poutsiaika DD, Skiffington S, Miller KB, et al. Daptomycin in the treatment of vancomycin-resistant *Enterococcus faecium* bacteremia in neutropenic patients. *J Infect* 2007;54:567–571.
276. Lessa FC, Gould CV, McDonald LC. Current status of *Clostridium difficile* infection epidemiology. *Clin Infect Dis* 2012;55:S65–S70.
277. Trifilio SM, Pi J, Mehta J. Changing epidemiology of *Clostridium difficile*-associated disease during stem cell transplantation. *Biol Blood Marrow Transplant* 2013;19:405–409.
278. Willems L, Porcher R, Lafaurie M, et al. *Clostridium difficile* infection after allogeneic hematopoietic stem cell transplantation: incidence, risk factors, and outcome. *Biol Blood Marrow Transplant* 2012;18:1295–1301.
279. Alonso CD, Treadway SB, Hanna DB, et al. Epidemiology and outcomes of *Clostridium difficile* infections in hematopoietic stem cell transplant recipients. *Clin Infect Dis* 2012;54:1053–1063.
280. Tai E, Richardson LC, Townsend J, et al. *Clostridium difficile* infection among children with cancer. *Pediatr Infect Dis J* 2011;30:610–612.
281. Bishop KD, Castillo JJ. Risk factors associated with *Clostridium difficile* infection in adult oncology patients with a history of recent hospitalization for febrile neutropenia. *Leuk Lymphoma* 2012;53:1617–1619.
282. Tleyjeh IM, Bin Abdulhak AA, Riaz M, et al. Association between proton pump inhibitor therapy and *clostridium difficile* infection: a contemporary systematic review and meta-analysis. *PLoS One* 2012;7:e50836.
283. Palmore TN, Sohn S, Malak SF, et al. Risk factors for acquisition of *Clostridium difficile*-associated diarrhea among outpatients at a cancer hospital. *Infect Control Hosp Epidemiol* 2005;26:680–684.
284. Debast SB, Bauer MP, Kuijper EJ, et al. European Society of Clinical Microbiology and Infectious Diseases (ESCMID): update of the treatment guideline document for *Clostridium difficile* infection (CDI). *Clin Microbiol Infect* 2014;20:1–26.
285. Cohen SH, Gerding DN, Johnson S, et al. Clinical practice guidelines for *Clostridium difficile* infection in adults: 2010 update by the society for healthcare epidemiology of America (SHEA) and the infectious diseases society of America (IDSA). *Infect Control Hosp Epidemiol* 2010;31:431–455.
286. Longtin Y, Trottier S, Brochu G, et al. Impact of the type of diagnostic assay on *Clostridium difficile* infection and complication rates in a mandatory reporting program. *Clin Infect Dis* 2013;56:67–73.
287. Zar FA, Bakkanagari SR, Moorthi KM, et al. A comparison of vancomycin and metronidazole for the treatment of *Clostridium difficile*-associated diarrhea, stratified by disease severity. *Clin Infect Dis* 2007;45:302–307.
288. Cornely OA, Crook DW, Esposito R, et al. Fidaxomicin versus vancomycin for infection with *Clostridium difficile* in Europe, Canada, and the USA: a double-blind, non-inferiority, randomised controlled trial. *Lancet Infect Dis* 2012;12:281–289.
289. Cornely OA, Miller MA, Fantin B, et al. Resolution of *Clostridium difficile*-associated diarrhea in patients with cancer treated with fidaxomicin or vancomycin. *J Clin Oncol* 2013;31:2493–2499.
290. Mullane KM, Miller MA, Weiss K, et al. Efficacy of fidaxomicin versus vancomycin as therapy for *Clostridium difficile* infection in individuals taking concomitant antibiotics for other concurrent infections. *Clin Infect Dis* 2011;53:440–447.
291. Louie TJ, Miller MA, Mullane KM, et al. Fidaxomicin versus vancomycin for *Clostridium difficile* infection. *N Engl J Med* 2011;364:422–431.
292. van Nood E, Vrieze A, Nieuwdorp M, et al. Duodenal infusion of donor feces for recurrent *Clostridium difficile*. *N Engl J Med* 2013;368:407–415.
293. Kassam Z, Lee CH, Yuan Y, et al. Fecal microbiota transplantation for *Clostridium difficile* infection: systematic review and meta-analysis. *Am J Gastroenterol* 2013;108:500–508.
294. Surawicz CM, McFarland LV, Greenberg RN, et al. The search for a better treatment for recurrent *Clostridium difficile* disease: use of high-dose vancomycin combined with *Saccharomyces boulardii*. *Clin Infect Dis* 2000;31:1012–1017.
295. Pozzoni P, Riva A, Bellatorre AG, et al. *Saccharomyces boulardii* for the prevention of antibiotic-associated diarrhea in adult hospitalized patients: a single-center, randomized, double-blind, placebo-controlled trial. *Am J Gastroenterol* 2012;107:922–931.
296. Boyle RJ, Robins-Browne RM, Tang ML. Probiotic use in clinical practice: what are the risks? *Am J Clin Nutr* 2006;83:1256–1264, quiz 1446–1447.
297. Muñoz P, Bouza E, Cuenca-Estrella M, et al. *Saccharomyces cerevisiae* fungemia: an emerging infectious disease. *Clin Infect Dis* 2005;40:1625–1634.
298. Vahabnezhad E, Mochon AB, Wozniak LJ, et al. *Lactobacillus* bacteremia associated with probiotic use in a pediatric patient with ulcerative colitis. *J Clin Gastroenterol* 2013;47:437–439.
299. Pépin J, Valiquette L, Gagnon S, et al. Outcomes of *Clostridium difficile*-associated disease treated with metronidazole or vancomycin before and after the emergence of NAP1/027. *Am J Gastroenterol* 2007;102:2781–2788.
300. Chopra T, Chandrasekar P, Salimnia H, et al. Recent epidemiology of *Clostridium difficile* infection during hematopoietic stem cell transplantation. *Clin Transplant* 2011;25:E82–E87.
301. Dubberke ER, Reske KA, Srivastava A, et al. *Clostridium difficile*-associated disease in allogeneic hematopoietic stem-cell transplant recipients: risk associations, protective associations, and outcomes. *Clin Transplant* 2010;24:192–198.
302. Tverdek FP, Rolston KV, Chemaly RF. Antimicrobial stewardship in patients with cancer. *Pharmacotherapy* 2012;32:722–734.
303. Eyre DW, Babakhani F, Griffiths D, et al. Whole-genome sequencing demonstrates that fidaxomicin is superior to vancomycin for preventing reinfection and relapse of infection with *Clostridium difficile*. *J Infect Dis* 2014;209:1446–1451.
304. Salgado CD, Mauldin PD, Fogle PJ, et al. Analysis of an outbreak of *Clostridium difficile* infection controlled with enhanced infection control measures. *Am J Infect Control* 2009;37:458–464.
305. Siegel JD, Rhinehart E, Jackson M, et al. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Health Care Settings. *Am J Infect Control* 2007;35:S65–S164.
306. Jabbar U, Leischner J, Kasper D, et al. Effectiveness of alcohol-based hand rubs for removal of *Clostridium difficile* spores from hands. *Infect Control Hosp Epidemiol* 2010;31:565–570.
307. Kern WV, Klose K, Jellen-Ritter AS, et al. Fluoroquinolone resistance of *Escherichia coli* at a cancer center: epidemiologic evolution and effects of discontinuing prophylactic fluoroquinolone use in neutropenic patients with leukemia. *Eur J Clin Microbiol Infect Dis* 2005;24:111–118.
308. Rangaraj C, Granwehr BP, Jiang Y, et al. Perils of quinolone exposure in cancer patients. *Cancer* 2010;116:967–973.
309. Rodríguez-Baño J, Navarro MD, Retamar P, et al. β -Lactam/ β -lactam inhibitor combinations for the treatment of bacteremia due to extended-spectrum β -lactamase-producing *Escherichia coli*: a post hoc analysis of prospective cohorts. *Clin Infect Dis* 2012;54:167–174.
310. Gupta N, Limbago BM, Patel JB, et al. Carbapenem-resistant enterobacteriaceae: epidemiology and prevention. *Clin Infect Dis* 2011;53:60–67.
311. Satlin MJ, Calfee DP, Chen L, et al. Emergence of carbapenem-resistant Enterobacteriaceae as causes of bloodstream infections in patients with hematologic malignancies. *Leuk Lymphoma* 2013;54:799–806.
312. Snitkin ES, Zelazny AM, Thomas PJ, et al. Tracking a hospital outbreak of carbapenem-resistant *Klebsiella pneumoniae* with whole-genome sequencing. *Sci Transl Med* 2012;4:148ra116.
313. Tumbarello M, Viale P, Viscoli C, et al. Predictors of mortality in bloodstream infections caused by *Klebsiella pneumoniae* carbapenemase-producing *K. pneumoniae*: importance of combination therapy. *Clin Infect Dis* 2012;55:943–950.
314. Bulik CC, Christensen H, Li P, et al. Comparison of the activity of a human simulated, high-dose, prolonged infusion of meropenem against *Klebsiella pneumoniae* producing the KPC carbapenemase versus that against *Pseudomonas aeruginosa* in an in vitro pharmacodynamic model. *Antimicrob Agents Chemother* 2010;54:804–810.
315. Pea F, Viale P, Cojutti P, et al. Dosing nomograms for attaining optimum concentrations of meropenem by continuous infusion in critically ill patients with severe gram-negative infections: a pharmacokinetics/pharmacodynamics-based approach. *Antimicrob Agents Chemother* 2012;56:6343–6348.
316. Jernigan MG, Press EG, Nguyen MH, et al. The combination of doripenem and colistin is bactericidal and synergistic against colistin-resistant, carbapenemase-producing *Klebsiella pneumoniae*. *Antimicrob Agents Chemother* 2012;56:3395–3398.
317. Maschmeyer G, Braveny I. Review of the incidence and prognosis of *Pseudomonas aeruginosa* infections in cancer patients in the 1990s. *Eur J Clin Microbiol Infect Dis* 2000;19:915–925.
318. Kang CI, Kim SH, Park WB, et al. Clinical features and outcome of patients with community-acquired *Pseudomonas aeruginosa* bacteraemia. *Clin Microbiol Infect* 2005;11:415–418.
319. Chatzimakolaou I, Abi-Said D, Bodey GP, et al. Recent experience with *Pseudomonas aeruginosa* bacteremia in patients with cancer: Retrospective analysis of 245 episodes. *Arch Intern Med* 2000;160:501–509.
320. Livermore DM. Multiple mechanisms of antimicrobial resistance in *Pseudomonas aeruginosa*: our worst nightmare? *Clin Infect Dis* 2002;34:634–640.
321. Ohmagari N, Hanna H, Graviss L, et al. Risk factors for infections with multidrug-resistant *Pseudomonas aeruginosa* in patients with cancer. *Cancer* 2005;104:205–212.
322. Levin AS, Barone AA, Penco J, et al. Intravenous colistin as therapy for nosocomial infections caused by multidrug-resistant *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. *Clin Infect Dis* 1999;28:1008–1011.
323. Naesens R, Vlieghe E, Verbrugge W, et al. A retrospective observational study on the efficacy of colistin by inhalation as compared to parenteral administration for the treatment of nosocomial pneumonia associated with multidrug-resistant *Pseudomonas aeruginosa*. *BMC Infect Dis* 2011;11:317.
324. Kofteridis DP, Alexopoulou C, Valachis A, et al. Aerosolized plus intravenous colistin versus intravenous colistin alone for the treatment of ventilator-associated pneumonia: a matched case-control study. *Clin Infect Dis* 2010;51:1238–1244.

325. Kwa AL, Loh C, Low JG, et al. Nebulized colistin in the treatment of pneumonia due to multidrug-resistant *Acinetobacter baumannii* and *Pseudomonas aeruginosa*. *Clin Infect Dis* 2005;41:754–757.
326. Felton TW, Goodwin J, O'Connor L, et al. Impact of Bolus dosing versus continuous infusion of Piperacillin and Tazobactam on the development of antimicrobial resistance in *Pseudomonas aeruginosa*. *Antimicrob Agents Chemother* 2013;57:5811–5819.
327. Delvallée M, Mazingue F, Abouchahla W, et al. Optimization of continuous infusion of piperacillin-tazobactam in children with fever and neutropenia. *Pediatr Infect Dis J* 2013;32:962–964.
328. Moriyama B, Henning SA, Childs R, et al. High-dose continuous infusion beta-lactam antibiotics for the treatment of resistant *Pseudomonas aeruginosa* infections in immunocompromised patients. *Ann Pharmacother* 2010;44:929–935.
329. Thom KA, Maragakis LL, Richards K, et al. Assessing the burden of *Acinetobacter baumannii* in Maryland: a statewide cross-sectional period prevalence survey. *Infect Control Hosp Epidemiol* 2012;33:883–888.
330. Pogue JM, Mann T, Barber KE, et al. Carbapenem-resistant *Acinetobacter baumannii*: epidemiology, surveillance and management. *Expert Rev Anti Infect Ther* 2013;11:383–393.
331. Safdar A, Rolston KV. *Stenotrophomonas maltophilia*: changing spectrum of a serious bacterial pathogen in patients with cancer. *Clin Infect Dis* 2007;45:1602–1609.
332. Stelfox H, Bates DW, Redelmeier DA. Safety of patients isolated for infection control. *JAMA* 2003;290:1899–1905.
333. Climo MW, Yokoe DS, Warren DK, et al. Effect of daily chlorhexidine bathing on hospital-acquired infection. *N Engl J Med* 2013;368:533–542.