positions a $CD8^+$ T cell in close proximity with a cancer cell, thus ensuring that the $CD8^+$ T cell will kill the cancer cell.

3. *Hairy Cell Leukemia*

Hairy cell leukemia (HCL) is a rare type of cancer, accounting for about 2% of lymphoid leukemias (106). There are only 500–800 new cases in the United States per year (107). Cladribine (108,109), a drug that kills T cells, is effective in treating at least 80% of patients with HCL. One week of therapy typically results in remissions lasting for a decade (110). Cladiribine lacks the typical side effects of chemotherapy, such as nausea and alopecia, but it can facilitate infections from viruses or from *Pneumocystis jirovecii*, a fungus formerly known as *Pneumocystis carinii* (111). Cladribine is distinguished in that it is also used for treating multiple sclerosis, as detailed elsewhere in this book.

f. Myeloid Neoplasms

1. *Acute Myeloid Leukemia*

In the United States there are about 13,000 new cases of AML per year (112). AML accounts for about 25% of all leukemias in adults (113). The disease presents by fatigue, bruising or bleeding, fever, and infection (114). Cheson et al. (115,116), Feldman et al. (117), and Appelbaum et al. (118), provide some of the endpoints used in clinical trials against AML.

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