Ocular involvement in leukemia can be divided into: 1) primary (or direct) leukemic infiltration of ocular structures by neoplastic cells, and 2) secondary (or indirect) involvement due to hematological abnormalities (anemia, thrombocytopenia and hyperviscosity), central nervous system (CNS) involvement, opportunistic infection, or treatment–related complication. Prolonged vascular stagnation especially in chronic leukemia may lead to peripheral retinal ischemia and eventually blinding complications such as proliferative retinopathy or even neovascular glaucom