Modelling the immune response in leukemia  
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A mathematical model coupling the dynamics of short-term stem-like cells and mature leukocytes in leukemia with that of the immune system will be investigated. The hematopoietic cells’ evolution is modelled through Mackey type delay differential equations with the notable difference that asymmetric division is incorporated in the model. For the immune system, while using some basic equations introduced by Kim, Lee and Levy, we consider an antileukemic immune response in the model. Also, the complex interactions between the components of the immune system, such as the autocrine effect, the stimulation of T-cytotoxic cells by t-helper cells and the regulatory process are introduced in a different way compared to other models. Stability analysis of equilibria is supplemented by numerical simulations.