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The Reply

We appreciate the comments of Roux et al on our article published in ***The American Journal of Medicine***[1] and agree with most of the points they raised. Indeed, no one would argue that all patients with acute leukemia are not at equal risk of *Pneumocystis jiroveci* pneumonia.

Firstly, as already stated in our article, the level of immunosuppression results from both the impairment in immunity related to the underlying disease itself and from the immunosuppressive effect of drugs used to control these diseases, particularly corticosteroids.

Secondly, we aimed to characterize non HIV-infected immunocompromised patients who developed *Pneumocystis jiroveci* pneumonia over the last 2 decades in our area to better target the immunodeficiency states where increased use of trimethoprim-sulfamethoxazole prophylaxis may be beneficial. Among the 154 non-HIV-infected patients diagnosed with *Pneumocystis jiroveci* pneumonia during the years 1990-2010, 8 were previously followed for acute leukemia, which translates into an estimated incidence of ~56 cases per 100,000 patient-year in this group. Of note, 6 were acute myeloid leukemia, which most likely reflects the limited use of trimethoprim-sulfamethoxazole in patients with acute myeloid leukemia, as compared with acute lymphoblastic leukemia, for whom *Pneumocystis jiroveci* pneumonia prophylaxis is systematic in most places.

Recent guidelines from the German Society of Hematology and Oncology issued 2 levels of recommendations for *Pneumocystis jiroveci* pneumonia prophylaxis in patients with acute leukemia: 1) strong evidence (A-I) in patients with acute lymphoblastic leukemia; 2) risk status not entirely conclusive (C-III) in patients with acute myeloid leukemia.[2] Our study suggests that it may be beneficial to lower the threshold for trimethoprim-sulfamethoxazole prophylaxis in patients with acute myeloid leukemia, given the high incidence of *Pneumocystis jiroveci* pneumonia observed in this group with current practices.[1] Although the study design did not allow the identification of specific risk factors to estimate the risk of *Pneumocystis jiroveci* pneumonia in this group, corticosteroid cumulative/daily doses, or CD4 T cell count would appear as potential surrogate markers.

According to the President's Council of Advisors on Science and Technology, personalized medicine refers to "the tailoring of medical treatment to the individual characteristics of each patient, which depends on the ability to classify individuals into subpopulations that differ in their susceptibility to a particular disease or their response to a specific treatment. Preventive or therapeutic interventions can then be concentrated on those who will benefit, sparing expense and side effects for those who will not".[3] Our study adds a brick to the wall of personalized medicine for patients with hematological malignancies by providing original data to better identify patients who may benefit from increased use of *Pneumocystis jiroveci* pneumonia prophylaxis. We did not state, at any time, that all patients with acute leukemia are at equal risk.

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