Implementation of a Protocol for Posaconazole Prophylaxis in Patients Undergoing Remission-Induction Chemotherapy for Acute Leukemia: from Guidelines to Real-life

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BACKGROUND
Fungal infections contribute to morbidity and mortality among patients with hematologic malignancies.1,2 In this population, invasive aspergillosis is the most common fungal infection and has a mortality rate up to 40%.3 Posaconazole is effective in preventing invasive fungal infections in patients undergoing chemotherapy for acute leukemia.4 The goal of the study was to determine the incidence of invasive aspergillosis in a center before and after the implementation of a protocol for posaconazole prophylaxis and to evaluate its real-life adherence.

METHODS
We reviewed the medical charts of all adult patients admitted to the hematology ward for acute leukemia between October 2011 and September 2014. During the first 18 months, anti-aspergillus preemptive therapy was used, while patients received posaconazole prophylaxis in the second 18-month period.

The primary endpoint was the incidence of invasive aspergillosis. In addition, we assessed the various difficulties linked to the application of the protocol.

RESULTS
We retrieved records for 65 patients with acute leukemia for a total of 105 courses of remission-induction chemotherapy. The incidence of proven or probable aspergillosis reported was 9.7% (3 patients) in the preemptive group and 4.3% (1 patient) in the prophylaxis group. There was a 5.4% decrease in incidence, which was however not statistically significant. The number needed to treat (NNT) was 19. When including possible invasive aspergillosis, the incidence decreased from 16.1% (5 patients) without prophylaxis to 8.7% (2 patients) with posaconazole. When considering proven, probable and possible infection, the NNT was 14.

Before and during the implementation of the prophylaxis protocol, during the preemptive therapy period, physicians adhered to the only 82.6% of treatments, as compared to 93.2% during the prophylaxis protocol (posaconazole was omitted in 1 patient and delayed in 2). Of note, posaconazole prophylaxis was interrupted in 1 patient due to intolerance.

CONCLUSION
We found a reduction of the incidence of invasive aspergillosis in our center with the implementation of the new protocol. Despite adequate adherence to the protocol, there were still cases of infections. This could possibly be explained by a lower bioavailability of the oral suspension posaconazole or more resistant strains.

A third phase of this study will focus on the introduction of posaconazole delayed-release tablet.

REFERENCES