

Background: Acute myeloid leukemia (AML) is associated with poor prognosis, particularly in elderly patients with co-morbidities. Combining azacitidine (aza), initially the standard of care by itself, with the BCL-2 inhibitor venetoclax (ven) demonstrated significant improvements in responses and survival compared to aza alone. However, as a myelosuppressive regimen, complications such as invasive fungal infections (IFI) are a potential concern. The incidence of IFI and use of antifungal prophylaxis are not well defined for newly-diagnosed AML patients receiving ven/aza.

Methods: We conducted a retrospective cohort review of AML patients treated with ven/aza at the University of Colorado Hospital from January 2014 to August 2020. Duration of therapy was defined as the initiation of treatment through (1) patient discontinuation, (2) disease progression, (3) bone marrow transplantation, or (4) death. Patients with a history of prior IFI were excluded. We assessed the impact of patient demographics, duration of neutropenia, antifungal prophylaxis, and AML-specific risk factors on the incidence of IFI.

Results: 144 AML patients were included in the study. 25 (17%) patients developed invasive pulmonary aspergillosis: 2 (8%) had proven IFI, 6 (24%) probable IFI, and 17 (68%) possible IFI. There was a statistically significant association between prolonged neutropenia (>60 days) and IFI ( $p=0.007$ ), whereas age, sex, and SWOG classification were not significantly associated with IFI. Ten patients received antifungal prophylaxis, and none developed IFI ( $p=0.21$ ).

Conclusions: The incidence of IFI in our AML cohorts treated with ven/aza was 17%, lower than that reported at other institutions. Although we were not powered to determine whether antifungal prophylaxis impacted IFI, there was no detectable difference in IFI for patients who received prophylaxis.