

J.P. Gangneux¹, J. El Cheikh², D. Caillot³, I. Yakoub-Agha⁴, M. Michallet⁵

¹Mycology-Parasitology, CHU de Rennes, Rennes, France ; ²Haematology, Institut Paoli-Calmette, Marseille, France ; ³Haematology, CHU de Dijon, Dijon, France ; ⁴Haematology, CHRU de Lille, Lille, France ; ⁵Haematology, CHU de Lyon-Sud Pierre-Bénite, Lyon, France

Objectives. The mortality rate associated with invasive fungal infections (IFI) remains very high ($\geq 40\%$), justifying the necessity of gaining a strong understanding of medical practices in terms of systemic antifungal therapies. This is particularly important in haematology units that closely follow the most highly exposed populations.

Methods. Multicenter, cross-sectional, prospective French observational study conducted in 24 haematology units over 5 consecutive days on adult or paediatric hospitalized patients suffering from haematological malignancies.

Results. Six hundred and fifty-five patients were enrolled in the register. Among evaluable patients (N=627), 44% received at least one systemic antifungal drug during the 5 days as prophylaxis (N=215, 78%), as empirical treatment (N=30, 11%) and as curative or pre-emptive treatment (N=40, 14%).

Overall, 494 patients (paediatrics, 13%) signed a consent form to participate into the extended study, with 38% of patients transplanted (including 25% of allogeneic Hematopoietic stem cell transplantation (HSCT), 8% of autologous transplant, and 5% of both) and 63% put into a sterile room. At inclusion, 87% of patients had not developed a previous IFI, 90% did not present a persistent fever on antibiotics and 74% had no neutropenia exceeding 10 days. At inclusion 50% of the patients received both antibiotic and antiviral treatment and 82% were administered chemotherapy and/or monoclonal antibodies and/or immunosuppressive treatment.

Forty-one percent of acute lymphoblastic leukemia (ALL), acute myeloid leukaemia (AML) or myelodysplastic syndrome (MDS) patients had no antifungal treatment, 43% received antifungal prophylaxis, 6% received empirical treatment and 10% received either pre-emptive or curative treatment. Of the non-Hodgkin's lymphoma (NHL), Hodgkin's lymphoma (HL), chronic lymphoid leukaemia (CLL) or myeloma patients, 68% did not receive any antifungal therapy and 84% of those who received an antifungal drug received prophylaxis.

As expected, transplanted patients, patients presenting neutropenia for at least 10 days and patients in partial or complete remission were more likely to receive an antifungal drug (74%, 65% and 56% of these patients, respectively).

Multivariate analysis showed that persistent fever refractory to antibiotherapy, duration of hospitalization over 30 days and ALL, AML or MDS are predictive factors for documented treatment (either curative or pre-emptive) (Figure 1). Focusing on antifungal prophylaxis, this early strategy was associated with allogeneic HSCT, entry in sterile room and antibiotherapy.

Conclusion. This study shows that 1/3 of patients hospitalised in haematological units receive antifungal prophylaxis and about half receive systemic antifungal drugs. These data provide new insights into the management of IFIs in French haematology units, which can help to improve patient management, especially identifying those who are more likely to require antifungal drugs. Some groups of patients benefit from ad-hoc antifungal treatment regarding their risk factors, while others (NHL, HL, CLL or Myeloma) should be analysed to improve a stewardship program.

