Background/Aims. To evaluate the incidence and the outcome of fungal infections in patients affected by hematological malignancies (HM) and admitted in Italian centres.

Methods. A retrospective study, conducted over 1999-2003, in HM patients, admitted in 18 hematology divisions in tertiary cares or university hospitals, who developed fungal infections.

Results. Our population included 11,802 patients: 3,012 with AML (25.5%), 1,173 with ALL (9.9%), 596 with CML (5%), 1,104 with CLL (9.4%), 1,616 with MM (13.7%), 3,457 with NHL (29.3%), 844 with HL (7.2%). Patients who underwent autologous or allogenic HSCT were included in a specific different analysis. A proven or probable fungal infection occurred in 538 patients, with an incidence of 4.6%; in particular we registered 346 episodes sustained by moulds (2.9%) and 193 by yeasts (1.6%). The incidence rate depends upon underlying malignancy (12.3% in AML, 6.5% in LLA, 2.7% in CML, 0.6% in CLL, 0.5% in MM, 1.6% in NHL, 0.9% in HL). Among moulds, the detected etiological agents were Aspergillus spp (310 episodes, 2.6%), Mucorales spp (14 episodes, 0.1%), Fusarium spp (15 episodes, 0.1%), and other rare fungi (7 episodes, 0.1%). Among yeasts we registered only septicaemia sustained by Candida spp (175 patients, incidence 1.4%). Other yeast infections were caused by Cryptococcus spp (8 pts, incidence 0.1%), Tricocysporon spp (7 pts, 0.1%) and other rare agents (2 pts). As for aspergillosis, the identification of the specific subtype of agent was possible only in the 108 cases (35%); A. fumigatus was identified in cases 15%, A. flavus in 12%, A. terreus in 5%, A. niger in 2%. It is worth noting that the number of infections caused by A. flavus increased from 1999 (5 pts, 8.8% of the total cases of aspergillosis registered during the year) to 2003 (14 pts, 18.4%); relative risk was about 2.10 (IC95% 0.8-5.49; p-value 0.117). Conversely all other subtypes showed a stable incidence. The lethality rate registered in the population was about 59%, with differences between aspergillosis (42%) and candidemia (33%). In particular the lethality due to aspergillosis ranged from 40% in 1999 to 45% in 2003 without significant variation (RR 1.11; IC95% 0.74-1.66; p-value 0.615), as well as the lethality in patients affected by candidemia not significantly increased from 30% in 1999 to 37.5% in 2003 (RR 1.25; IC95% 0.67-2.32; p-value 0.478).

Summary/conclusions. Our study confirms the general trend already described for hematological patients: infections due to moulds continue to be more frequent than those caused by yeast. Among all fungi, Aspergillus spp remains the main etiologic agent. AML represents the most frequently involved cathegory. The mortality rate is actually about 40%, with a remarkable decrease when compared to past years.