

A European period-prevalence study to estimate the rate of invasive pulmonary mould disease (PIMDA study)

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Objectives

In the USA, the Transplant-Associated Infection Surveillance Network (TRANSNET) successfully reported its prospective surveillance for invasive fungal infections in haematopoietic stem cell transplant (HSCT) recipients¹. The European Confederation of Medical Mycology (ECMM) together with the Infectious Diseases Group of the EORTC and the Infectious Diseases Working Party of the EBMT wanted to undertake a similar survey so initiated a period prevalence study in Europe to determine the rate of occurrence of invasive pulmonary mould disease (IPMD) among recipients of an allogeneic HSCT and patients treated for AML/MDS.

Methods

The primary aim was to estimate the rate of occurrence of probable and proven (PP-IPMD) according to the revised EORTC/MSG definitions². At least 1,000 patients would be required to estimate the rate of PP-IPMD with 95% confidence limits of $\pm 1.5\%$ (assuming an accrual of 70% of AML/MDS patients with an expected rate of 5% IPMD and 30% of recipients of an HSCT with an expected rate of 10% IMPD). To achieve this we enrolled 43 centres in 14 countries in the EU as well as Israel, Russia and Turkey (www.pimda.eu).

Each centre monitored for 12 weeks all eligible patients admitted to hospital from June 6 to December 5, 2012. All centres agreed to a minimum diagnostic work up (serum or plasma for galactomannan and a CT scan done within 7 days of each other). The data were entered into a secure online database (Curavista BV, The Netherlands).

Results

The database was closed to the participating sites on the 29th October 2013 and the analysis was finalised on the 25th March 2014 after data cleaning. Of the 1243 patients recruited, 1205 were considered eligible in 40 centres were included in the analysis. There were 657 (54%) treated for AML/MDS and the remainder received an HSCT. The median age was 51 years (18-92) and 663 (55%) were males. 25 (61%) of the centres required informed consent and recruited a total of 623 (52%) patients.

Rates of PP-IPMD were 6.6% [95%CI: 5.2-8.1] overall, 8.1% [95%CI: 6.1-10.4] for AML/MDS and 4.8% [95%CI: 3.1-6.9] for HSCT. Rates ranged from nil to 11.7% per country (Figure 1) though the country-specific 95% confidence intervals did not overlap. The variation in rates was influenced by whether or not informed consent

was required by a centre [OR 1.74: 95%CI: 1.24-2.43: p=0.001] and receipt of an allogeneic HSCT [OR 0.45: 95%CI: 0.32-0.65: p<0.0001].

Conclusion

The rates of PP-IPMD for AML/MDS and HSCT differed and were the opposite of what we anticipated. Rates also varied between countries though not significantly suggesting that only local epidemiology can provide proper prevalence data for both groups of patients.

References

1. Kontoyiannis *et al* **Clin Infect Dis** 2010; **50**:1091-100.
2. De Pauw *et al* **Clin Infect Dis** 2008; **46**: 1813-21.

