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MedicCleanAir® devices for air filtration, a low-cost very effective method of managing ambient Aspergillus spp colonization.

**Introduction:** Invasive Aspergillosis (IA) is still a major problem in immunocompromised hosts even in HEPA wards, and often become dramatic during hospital renovation works. We report the results and costs of managing ambient Aspergillus spp colonization in a single center without filtered air.

**Material and methods:** Between 01/01/2000 and 31/08/2001 we performed 385 ELISA Pasteur Platelia® tests for galactomannan (Gal) twice a week in immunocompromised hosts undergoing allo/autoSCT, or chemotherapy for acute leukaemia in our single bed room without HEPA semi-intensive ward. Results were considered positive if at least 2 consecutive positive tests were obtained. All the febrile patients who fitted EORTC criteria for proven or probable IA were treated with liposomal (L-Amb). Air-borne aspergillus spp (Asp) contamination was monitored for by CFU-C assay in the air, in the dust and on the furniture, before and after the settlement of MedicCleanAir® devices for air filtration, one for every single bed room on day 08/12/2000. Such mobile devices (56Lx37Hx33D cm) are fitted with filter for particles at least up to 0.02 micron, have an air-inlet and air-outlet over 360° and produce up to 250 mc clean air per hour.

**Results:** In 2000, during renovation works in our hospital, Gal assay was positive in 18 samples out of 193. Five out of 23 patients developed IA (2 proven and 3 probable); in 2001 Gal assay was positive in 8 out of 192 tests and no patient out of 17 developed IA. The cost for the tests performed in 2000 and 2001 was roughly the same (1809 € and 1843 €). Air room Asp survey performed on 01/08/2000 revealed 1 colony/2 m<sup>3</sup> of air, 140 colonies/m<sup>2</sup>/h in dust and 51/m<sup>2</sup>/h in the furniture. Similar surveys performed in the same clinical ward rooms one year later (on day 22/01 and 19/09/2001) revealed respectively 6 and 0 Asp colonies /9m<sup>3</sup> in the air, 0/m<sup>2</sup>/h in the dust both on 22/01 and 19/09/2001, and 8,1 and 3/m<sup>2</sup>/h on the furniture. During 2000, 5 patients were treated with L-Amb with an overall cost of 161627 €, while the following year no single patient was treated.

**Conclusions:** In this study we stress that the use of MedicCleanAir® devices for air filtration was able to dramatically reduce the incidence of IA, saving an overall expense of more than 161000 € / year. Such approach appears to be easily feasible even in poor economic resources countries.

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