

respiratory material was cultured during each of the following pretransplant phases. Phase 1: intra-operatively obtained bronchial swabs and histology of the explanted lung; phase 2: respiratory material taken up to one month prior to transplantation; phase 3: respiratory material taken earlier than one month prior to transplantation.

Among a cohort of 184 patients IA developed in 12 (incidence 6.5%, 95%CI 3.4 ; 11.1). The median time from transplantation to IA was 27 days (range, 6 to 224). During at least phase 1, 2 or 3, 22 (11.9%), 36 (19.6%), or 62 (33.7%) patients, respectively, were tested aspergillus positive. 37 patients (20.1%) were at least phase 1 or 2 aspergillus positive. In a logistic regression model, hospitalization prior to transplantation was found as a protective factor against IA. Significant risk factors were requirement of hemodialysis (OR 5.4; 95%CI 1.1-28.3) and pretransplant colonization with aspergillus species in phase 1 or 2 (OR 11.1; 95%CI 2.5-58.6). The positive predictive value was maximal for aspergillus positive tested patients during phase 1 and 2 with 33% followed by phase 1 and phase 1 to 3 (both with 27%), and phase 2 and phase 1 or 2 with each 19%.

Patients awaiting a lung transplantation should undergo monthly screening for aspergillus colonization in respiratory materials. In case of positive results, patients should receive effective antimycotic prophylaxis.

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## R20

### Yeasts in respiratory tract of Trauma-Intensive-Care patients

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Most nosocomial fungal infections are caused by yeasts taxonomically affiliated to the genus *Candida*. Various factors (e.g. mechanical respiration, antibiotic therapies, and surgeries) predispose Trauma-Intensive-Care-Unit (TICU) patients to fungal colonisation. This study aims to detect groups within the TICU patients with a raised risk of respiratory tract colonisation/infection by yeasts.

The diversity and frequency of yeasts in the respiratory tract of patients from the TICU of the University Hospital Innsbruck were studied. A total

of 200 respiratory-tract-secretion samples (RTSS: 6 sputum, 5 bronchial-secretions, 137 tracheal-secretions, 52 broncho-alveolar-lavages) from 58 patients (44 males [179 RTSS] and 14 females [21 RTSS]) were serially collected within four months. For the selective detection of yeasts in RTSS a benomyl-containing medium (SceSel) was used. Out of the RTSS, 493 yeast pure cultures were gained. They were all identified by means of morphology, anatomy, and physiology.

Strains of seven *Candida* species (*C. albicans*, *C. dubliniensis*, *C. famata*, *C. glabrata*, *C. kefyr*, *C. lusitaniae*, and *C. tropicalis*) and one *Rhodotorula* species were found.

Overall, 54% of the RTSS were yeast-positive. *Candida albicans* was found in 46% of all samples, *C. glabrata* in 10%, *C. lusitaniae* in 4.5%, *C. tropicalis* in 4%, and *C. dubliniensis* in 2.5% of all RTSS. Forty-two percent of the RTSS contained strains of a single yeast species, 9.5% contained strains belonging to two species, and strains of three or more species were found in the remaining 2.5% of samples. The frequency of *Candida* spp. (except *C. albicans* and *C. tropicalis*) in RTSS correlated positively with the duration of TICU-stay, especially the frequency of *C. glabrata* increased significantly with the time. Significant correlations were found for the simultaneous occurrence of *C. dubliniensis* and *C. lusitaniae* as well as for *C. glabrata* and *C. tropicalis*.

Strains of *Candida dubliniensis*, *C. glabrata*, and *C. tropicalis* were found in a much higher frequency in RTSS of patients over 70 years than in younger patients.

One of the main conclusion drawn in this study is that the risk of a *Candida* (especially *C. glabrata*) colonisation/infection of the respiratory tract increases significantly with the advanced age of the patients and the duration of patients' TICU-stay.

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## R21

### Impact of bacterial and viral diarrhea on the fecal yeast flora

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More than half of the human population is colonized with yeasts in the gastrointestinal tract. Yeast