30.001

Candida species in the lower respiratory tract of healthy individuals

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Background: *Candida* species (spp.) are frequently isolated from respiratory tract secretions such as endotracheal aspirates (EA) in patients with pulmonary infiltrates. Since the prevalence of *Candida* spp. in the lower respiratory tract is unknown in healthy individuals the pathogenetic relevance of *Candida* spp. in the lower respiratory tract is difficult to assess.

Methods: A total of 71 healthy individuals without clinical, laboratory or radiological evidence of respiratory tract infections (temperature >38 °C, elevated CRP >8 mg/dl, leukocytosis >11400, elevated neutrophiles) or any other lung diseases (e.g. COPD, asthma bronchiale, sarcoidosis, interstitial lung disease, malignant diseases of the lung) undergoing general anaesthesia due to elective surgery were enrolled. Exclusion criteria included antifungal therapy within 8 weeks and antimicrobial therapy within 4 weeks prior to study inclusion (with the exception of antimicrobial surgical prophylaxis), immunosuppressive therapy, active haematooncological diseases and HIV positivity. The presence of *Candida* spp. in the lower respiratory tract was investigated in EA samples cultivated on *Candida* CHROMagar. The *Candida* colonies were differentiated as *C. albicans*, *C. glabrata*, *C. krusei*, *C. tropicalis* or others according to the color of colonies and by API Aux test. For bacterial growth EA samples were further cultivated on selective agars. Bacterial cultures are counted and identified by routine microbiological procedures. In addition, oral swabs were obtained and cultured on *Candida* CHROMagar.

Results: A total of 88 microorganisms were isolated from 41 of the 71 EA samples containing 1 yeast (*C. krusei)*, 62 gram-positive and 25 gram-negative bacterial species including the indigenous oral flora. In 30 EA samples neither bacteria nor fungi were cultured. A total of 24 *Candida* spp. were isolated from 21 of the 71 oral swabs containing 18 *C. albicans,* 2 *C. glabrata* and 1 *C. krusei* isolates. In addition, *C. krusei* isolated from both EA sample and oral cavity was originated within the same patient.

Conclusion: The colonization of the lower respiratory tract with *Candida* spp. in healthy individuals seems to be uncommon, despite a relative frequent *Candida* spp. colonization of the oral cavity.

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influence of gender, age, previous hospitalization and hospital stay on *Candida*-colonization of patients in a non-surgical ICU

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Background: The incidence of systemic fungal infections is increasing and their mortality remains high despite all advances in therapy. Accurate diagnostic measures are still difficult to obtain and evaluate in order to determine the need for antifungal treatment. Moreover, *Candida* species differ substantially in their antimycotic susceptibility. Thus knowledge of species to be expected is crucial for not missing the diagnosis and making the right decision how to treat.

Methods: In a prospective study over 30 month we analysed samples from 411 patients (160 women and 251 men, mean age 63.6 years, mean APACHE-II-Score 20.8) admitted to our ICU. Swabs from nostril, throat and anus and specimens of tracheal secretions and urine were taken and cultured on CHROM- or CandID- Agar at 36 °C. The hospitalization history of the patients was investigated.

Results: Positive results were found in 43% of all 1868 investigated samples. Concerning the distribution of species, we found *Candida albicans* in 69%, *Candida glabrata* in 35% and *Candida tropicalis* in 8% of all positive specimens. The colonization index was higher in women than in men (mean 0.47 vs. 0.39, $p < 0.01$) with no significant influence of age. This difference was due to a higher rate of colonization of anus and urine in women (both $p < 0.001$). The species distribution showed no difference between sexes, but the rate of nonalbicans species rises significantly with age (in females $p < 0.05$, in males $p < 0.01$). A hospital stay longer than 7 days before admission to the ICU was linked with a higher rate of colonization (52% vs. 38%) but not with a significant change in species distribution. Patients who had been hospitalized within two years before the current hospital admission, showed a higher rate of colonization (42% vs. 36%) and a higher proportion of non-albicans species (48% vs. 34%).

Conclusion: 1. Women are more frequently colonized with yeasts than men, particularly in urine and anal swabs. 2. With advancing age, the proportion of non-albicans species detected is increasing. 3. A longer duration of hospital stay is associated with a higher colonization rate. 4. Repeated hospitalizations are linked with a higher rate of non-albicans species.

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30.003

Mixed fungal colonization in non-surgical intensive care patients

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Background: Knowledge of risk factors is important for properly applying and evaluating diagnostic tests to derive

therapeutic conclusions. Colonization with fungi has been identified as an independent risk factor for invasive mycosis. In addition to colonization with a single species, the combination of different fungal species may be of interest.

Methods: In a prospective study we analyzed samples taken from 411 patients after admission to our ICU. Swabs from nostril, throat and anus and specimens of tracheal secretions and urine were taken and cultured on CHROMAgar.

Results: Positive results were found in 798 (42.7%) of all 1868 samples. Of these, 618 were positive for a single species, 158 for two species, and 22 for three species. Concerning distribution of species, we found *Candida albicans* in 69.3%, *Candida glabrata* in 34.8% and *Candida tropicalis* in 8.1% of all positive specimens. In 90 cases, cultures grew *Candida albicans* together with *Candida glabrata*, in 23 cases, *Candida albicans* together with *Candida tropicalis*, in 12 cases, *Candida albicans* together with *Candida glabrata* and *Candida tropicalis*. Most frequently, a mixed colonization was detected from throat swabs (74 mixed, out of 281 positive cultures, 26.3%), followed by tracheal secretions (35 mixed, out of 153 positive cultures, 22.9%) and anal swabs (48 mixed, out of 235 positive cultures, 20.4%). In contrast, a mixed colonization was significantly less frequent in nasal swabs (18 mixed, out of 136 positive cultures, 13.2%) and in urine (5 mixed, out of 56 positive cultures, 8.9%).

Conclusion: A large proportion of samples showed growth of yeasts. Out of culturally positive, in 22.6% were found more than one species. Colonization with more than one species was found to be significantly more frequent in throat, trachea and anus compared to nose and urine.

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30.004

Recent trends of Candida epidemiology in cancer and non-cancer patients

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Background: In recent years a shift towards candida non albicans has been reported from candidemia trials. A species shift in candidemia is important, since newer guidelines favor upfront echinocandins containing an economic burden. This has to be balanced with medical needs. Trends of epidemiology outside of controlledl trials are therefore of particular interest.

We analyzed all candida isolates from five Munich teaching hospitals (3500 beds). The objective was to compare all candida isolates and all candidemia eps in 2008 and 09 with the previous 2ys (data in brackets).

Methods: Between 01/08 and 10/09 a total of 15258 candida isolates were detected. No routine azole prophylaxis was given beside high risk cancer pts.There was no hint for a seasonal cluster during the study periods.

Results: While 64,20% (64.9%) were C. albicans, 7,5% (7.8%) were C. glabrata ahead of C. tropicalis with 4,7 (4.6%), while in 1,74% C. krusei was detected. 384 isolates were obtained from two hemato-oncology units with C. albicans 52, 3% (80.5%) ahead of C. glabrata 8,1% (7.8%), C. tropicalis 5,4% (4.7%) and C. krusei (1.9%). A total of 148 isolates were detected from blood cultures. C. albicans was found to be less common in candidemia 57,5% (58.9%), but dominated far ahead of C. glabrata 17,1% (20.9%), C. tropicalis 6,8% (7.0%), C. parapsilosis 4,8% (5.4%) and C. krusei 2,7% (3.1%). 28.6% of candidemia eps was by C glabrata in cancer pts in 2008 an 09.

Conclusion: Although a shift towards C. non albicans has been described elsewhere, our study indicated C. albicans remains the leading species. No further shift to C. glabrata and C. tropicalis has been observed within the last 4 years. If candida is found, C. glabrata is detected about 2.3-fold more often and accounts for 17% of candidemia eps, with an even 3.8-fold higher risk in cancer pts. Echinocandins, newer azoles and lipid AmB therefore seem to be justified for upfront candidemia Rx, in particular cancer and those pts with an unstable clinical condition.

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30.005

Anti-Saccharomyces cerevisiae (ASCA) antibody levels in a subgroup of patients with ulcerative colitis, Crohn's disease, GI Behcet, and GI tuberculosis: Correlations with disease duration, activity, and extension

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Background: Clinical utility of serological markers in inflammatory bowel disease (IBD) diagnosis and differentiating is controversial. Recently ASCA has been found to have some correlation with the complication and recurrent surgery rate Our aim was to seek for correlations between ASCA levels and disease duration, extension, activity, CRP levels, and use of immmunosupressive therapy

Methods: A total of 41 consecutive patients (16 UC, 20CD, 3 GI BD, and 2 GI Tb; 34 women, 7 male) were analyzed regarding ASCA IgG levels with anti-ASCA IgG ELISA kit (Euroimmune, Lübeck, Germany), the cut-off value being 15 U/ml. Disease activity was assessed using SEO for UC and CDAI for CD, GI BD, and GI Tb patients, respectively. Additionally, a simplified endoscopic extension score was used by dividing the colon into six equal units and accepting ileal involvement as an additional unit in an ordinal manner. SPSS 15 for Windows is used for data collection and are expressed as means, with SD of the mean calculated when appropriate. Correlations were sought using Pearson's and Spearman's correlation coefficient and multivariate analysis was performed by using a stepwise regression model. $p < 0.05$ was regarded as significance.