

gation. While the inhibitor stabilizes the 4' E-2FdA-MP-terminated primer at the pre-translocation state, our preliminary experiments show no significant increase in the pyrophosphate-dependent excision rate of 4' E-2FdA-MP as compared to ddAMP.

Conclusions: This highly potent chain termination activity arises from difficulty of the primer 3'-terminus to translocate following incorporation of the compound, and not from simple steric hindrance due to the 4' substitution. Therefore, we propose that 4' E-2FdA is a Translocation-Deficient Reverse Transcriptase Inhibitor (TDRTI) that acts by a novel mechanism.

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MSMs/MSWs, their Sexual Behavior and HIV/AIDS

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Background: A higher rates of HIV infections are transmitted through homosexual contact. Most MSMs are youth and are an incredibly diverse group, in terms of both their economic circumstances and sexual attitudes and behavior.

Materials: Younger youth are more economically disadvantaged than older youth. Young students are often more subject to peer. Due to many reasons, MSMs are seduced by male sex workers (MSWs). Most of them are either married or will become married, thus having an impact upon women's reproductive health.

Methods: On the one hand, Government's different strategies for national health program in terms of sexual health and HIV/AIDS has shaded a negative impact among such vulnerable population, on the other hand, due to a socio-cultural-religious reasons, those behaviors are to a large extent invisible, often difficult to access in terms of standard sexual health promotion framework of the nation.

Result: The result is that those most needing information, education and counseling are driven underground. Men and women are not only at greater risk of being infected, but also HIV/AIDS affects women also as caregivers in the family.

Conclusion: A urgent need to promote behaviors, which enable to adopt a lifestyle without risk of HIV and to provide counseling services is essential. When youth belong to an organization that helps them and provides opportunities, they better avoid risky behaviors, including those that might lead to HIV/AIDS. Every social sector should not discriminate/stigmatize them so that they can create an environment to change their behavior. Regardless, there should be ensured legal framework protections of human rights of those sexual minorities.

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Prevalence of Intestinal Coccidian Protozoa in Adults with HIV/AIDS

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Background: In spite of the importance of the infections by intestinal coccidian in patients infected with the Human Immunodeficiency Virus (HIV) or with Acquired Immunodeficiency Syndrome (AIDS), in Bolivar state still many clinical and epidemiologic aspects of these infections in that group of patients are not known.

Objective: To determine the prevalence of intestinal coccidian protozoa in adult patients with HIV/AIDS.

Methods: A study was made of type case/control with 39 stool sam-

ples of equal number of positive patients HIV or with AIDS (Group of Cases) and 39 stool samples of equal number of patients hospitalized by other causes or that went to a specialized consultation in the University Hospital Ruiz and Páez (Group Control), from January-2004 to December-2005. The feces were put under direct examination, concentration methods of Kato and Formol-ether and Kinyoun staining.

Results: The prevalence of intestinal parasitism, in the 39 HIV/AIDS patients, was of 79.49%; whereas in the control group was of 48.72% (n), the difference was statistically significant ($p < 0.05$). In both groups, 5 species of parasites or intestinal commensals were diagnosed, emphasizing *Blastocystis hominis* with 58.97% in patients HIV/AIDS and 28.21% in the control group. The global prevalence of coccidian was of 23.08% (9/39) in HIV/AIDS patients, and 25.64%, in the control group ($p > 0.05$). In HIV/AIDS patients, *Isospora belli* was the coccidian more frequently observed (20.51%), whereas in the control group it was *Cyclospora cayotensis* (20.51%). There were not differences as far as sex ($p > 0.05$) or the age of the patients infected with coccidian. The reason for consultation more frequently referred by HIV/AIDS patients was chronic diarrhea. In addition this group of cases consulted 10 times more frequently with chronic diarrhea than the control group (OR: 9.81; $p < 0.05$). In the group of cases, abdominal pain (76.92%) and the diarrhea (71.79%) were the symptoms more commonly observed. HIV/AIDS patients parasited by coccidian showed a count and lymphocyte relation of type CD4/CD8, below the normal values, mainly in the affected ones by *I. belli* and *C. cayotensis*.

Conclusions: A high prevalence of intestinal coccidian protozoa in evaluated HIV/AIDS was determined, although there were no demonstrated differences with the control group.

Infections in Cancer Patients and in Patients with Hematological Malignancies

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Use of Internally Controlled Reverse Transcriptase Assay for Detection of 13 Respiratory Viruses in Immunocompromised Patients

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Background: Infection is the leading cause of death in patients with hematological malignancy and clinical presentations for viral respiratory tract infection are in these patients often non-specific. Therefore rapid and throughput laboratory technique that can detect a panel of common viral infections is desirable. PCR detection in clinical specimens with limited amount of RNA (e.g. nasopharyngeal swabs) should include the internal control to ensure the integrity of the assay. The aim of present study was to optimize reverse transcription - polymerase chain reaction (RT-PCR) with internal control for routine detection of 13 most common respiratory viruses in nasopharyngeal swabs (NS) and bronchoalveolar lavage fluids (BALF).

Materials and Methods: 400 microlitres of NS or BALF were used for RNA isolation. Nonhuman and nonviral (plant) control RNA obtained by in vitro transcription was added to all samples before further processing. Then RNA was isolated using QIAamp Viral RNA Mini Kit (Qiagen). Viral RNA of *respiratory syncytial virus* (RSV), *parainfluenza virus* subtypes 1, 2, 3 (PIV 1, 2, 3), *adenoviruses*

serotypes 1-7 (AD 1-7) and control RNA were detected by multiplex RT-PCR. In second multiplex nested RT-PCR influenza viruses subtypes A and B were differentiated.

Results: Between 12/04 and 1/08 we analyzed a total of 149 NS collected from 88 patients and 134 BALF collected from 100 patients. The following pathogens were identified in NS/BALF, respectively: RSV -26/17, AD (1-7) - 1/1, PIV1 - 2/2, PIV2 - 3/1, PIV 3 - 4/4, FLU A - 9/5 and FLU B - 1/1. Four patients were simultaneously infected with two viruses (2 - RSV and FLU A, 2 - RSV and PIV3).

Conclusions: Presented multiplex RT-PCR assay enables cheap, rapid and sensitive detection of many pathogens at the same time, even when mixed infection is present. Using of the internal control of RNA isolation and sample inhibition ensures that true and false-negative results are distinguishable in the assay. Although RV infections were common in our study (23.1% BALF and 30.8% NS positive) in most patients just symptomatic treatment was needed. Thus clinical significance of the virus detection needs further evaluation.

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Trends in Colonization and Infection Caused by Vancomycin-resistant *Enterococci* (VRE) in Immunocompromised Patients at Hemato-oncological Department Between 2003-2007

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Background: VRE are significant nosocomial pathogens in immunocompromised pts with hematological malignancies. Continual monitoring of incidence of VRE and targeted prevention are necessary for improvement of complex care of hemato-oncological patients.

Objectives and Methods: The aim of the study was the retrospective analysis of phenotypic and clinical epidemiological trends of VRE at large hemato-oncological department. in Czech Republic between 2003-2007. At the same time we analyzed antibiotic (ATB) consumption in the entire period.

Results: During the 5-year period total No. of all patients with VRE colonization or infection was 186 (vanA - 155, vanB - 31). Blood

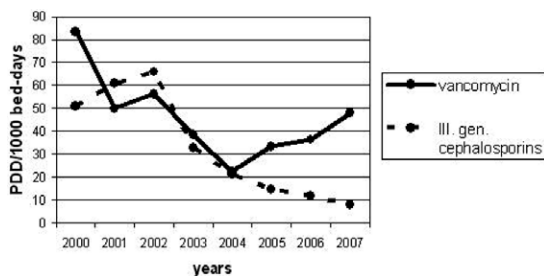


Figure 1. Trends in consumption of antibiotics in 2000–2007.

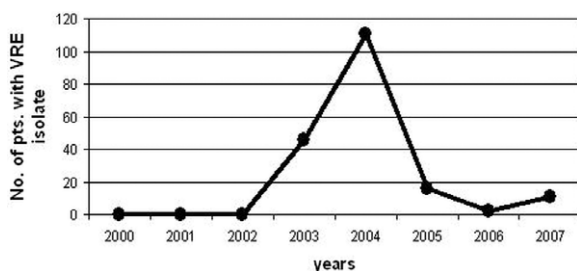


Figure 2. Trends in colonization and infection caused by VRE in 2000–2007.

cultures (BC) were positive for VRE in 11 cases. In 2004 an excessive outbreak of VRE isolates occurred, both in colonization and BC (46 - 2003 vs. 111 - 2004). The percentage ratio of VRE from all *enterococci* also increased (10% - 2003 vs. 25% - 2004). The % ratio of VRE from all *enterococci* in BC also rose (8% - 2003 vs. 40% - 2004). We identified these possible reasons: 1) enhanced usage of vancomycin and the third generation (III.g.) cephalosporins in 2000-2002 (average consumption of ATB in PDD/1000 bed-days - vancomycin: 63, III.gen. ceph.: 59); 2) lack of regimen. This emergence of VRE was reason for institution of appropriate regimen (including regular detection and isolation of VRE carriers, hand-hygiene) and marked restriction in usage of the above mentioned groups of ATB (2005 - vancomycin: 33, III. gen. ceph.: 15). These precautions led to the significant decrease of VRE in the following years (2005 - 16 pts. with VRE colonization or infection, 2% VRE from all isolates of *enterococci*, 1 VRE in BC, 3% VRE of all *enterococci* in BC).

Conclusions: Regular detection of VRE carriers, particular judicious use of vancomycin and III. gen. cephalosporins and institution of appropriate regimen facilitated significant decrease of VRE at our dept. and thus resulted in lower morbidity and mortality and healthcare costs.

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Use of Beta-D-glucan Measurements in Haematological Patients with Persistent Neutropenic Fever

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Background: Early sensitive diagnosis of invasive mycoses (IM) in pts with persistent febrile neutropenia (PFN) is important for tailored use of antifungals and optimizing successful outcome. We assessed the clinical usefulness of the beta-D-glucan (BG) assay in patients with PFN at risk from IM.

Materials and Methods: One hundred adults with haematological malignancy neutropenic (<500/ml) with persistent fever (>38.3 C >4days) after chemotherapy had alternate day serum assayed for BG (Cape Cod Assocs). IM diagnosed as per EORTC/MSG criteria. No pt had antifungal drug prophylaxis. Pts with PFN unresponsive to antibiotics received empirical treatment with 3mg (increasing to 5-10 for IM) per kg/day liposomal amphotericin B. The mean and median BG concentrations in the two pt subgroups of PFN alone or with IM were compared with the Mann-Whitney test. 2x2 contingency tables were analysed with Fisher's exact test.

Results: IM developed in 38 (14 candidiasis [12 proven/probable, 2 possible], 24 aspergillosis [14 probable, 10 possible], PFN only in 42 pts. Serum BG was significantly elevated on the first day of PFN and all subsequent days to day 10 PFN in pts who developed IM (Figure 1). Median BG was 95.8 and 32.9 pg/ml for patients with IM and only PFN respectively (p<0.0001). Antifungal therapy did not affect the values over the first 10 days. There was considerable inter-patient variability in BG time-patterns. Using cut-offs of between 60 and 100 pg/ml, at least 2 sequential values >80 pg/ml ('positive test') gave optimal accuracy of 81%, positive/negative predictive values respectively of 77/87%. Of pts with IM 78% had a positive test a mean of 1.25 days prior to IM diagnosis. However by sampling from the first neutropenic day instead of from PFN, 50% of those with IM were detected 5 days earlier. Daily sampling did not improve the sensitivity. 73% of pts with at least 2 readings but without IM had severe mucositis/enterocolitis compared with 19% who had less than 2 readings at least 80 pg/ml (p=0.002). In most cases the rises in BG were transient (Figure 2). The overall