innate immune derangements in skin keratinocytes. Toward this, we adopted the modelized system, live Staphylococcus aureus-challenged skin keratinocytes.

**Methods:** HaCaT cells were preincubated with or without urushiol, and then treated with live S. aureus. Expression of innate immune parameters (hBD1-4, TLR2, IL-6, IL-8, and TNF-α) is analyzed by RT-PCR. The kinetics of these parameters was assessed by western blotting. Nitrite concentration was determined by Griess reagent.

**Results:** Expression of TLR2 was clearly induced by urushiol or live S. aureus in HaCaT cells. Interestingly, activation of hBDs in S. aureus-infected HaCaT cells was elicited by urushiol. In parallel, there was an augmented release of proinflammatory cytokines such as TNF-α, IL-6 and IL-8. These innate foot-print markers might be regulated via, at least, activation of NF-κB and MAP kinase cascades.

**Conclusions:** These results suggest that urushiol would modulate innate immune derangements in skin keratinocytes. As important clinical implications, the control of expression of TLR2 and hBDs by urushiol might counteract S. aureus infection in skin barrier. This is a first report regarding innate immune profiles of urushiol in skin keratinocytes.

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44.050

The Pattern of Parenteral Antibiotics Usage and Susceptibility Test at A. Wahab Sjahranie General Hospital Samarinda, Indonesia

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**Background:** Antibiotics resistance is a major problem all over the world, including Indonesia. Overuse of antibiotics and inappropriate choice of antibiotics are the most important factors that cause antibiotics resistance, besides other factors such as inadequate dosage, low quality products. The aims of this study are to know the pattern of parenteral antibiotics usage and susceptibility tests at A. Wahab Sjahranie General Hospital Samarinda, Indonesia.

**Methods:** A retrospective study was performed by collecting data from medical records of patients treated at the Department of Internal Medicine, Department of Pediatric, Department of Surgery, Department of Obstetric - Gynecology who obtained parenteral antibiotics from October to December 2006. Data analyzed included final diagnosis, type of parenteral antibiotics used, culture and susceptibility test.

**Results:** There were 1627 patients involved in this study with 1695 prescription of parenteral antibiotics. The most common parenteral antibiotics used were cefotaxime (48.9%), amoxicillin (24.9%), cefuroxime (5.1%), cephalothin (4.8%), gentamicin (4.4%). Only 25 specimen cultures including blood, urine, feces, pus were performed (1.5%). Most specimens were pus (88%). Aerob cultures showed bacteria found were Eschericia coli (6 isolates), Staphylococcus aureus (5 isolates), Staphylococcus albus (3 isolates), Klebsiella sp (2 isolates), Pseudomonas sp (2 isolates), Proteus vulgaris (2 isolates), Citrobacter freundii (1 isolate), Proteus mirabilis (1 isolate), Proteus providencia (1 isolate), Staphylococcus citrus (1 isolate), Streptococcus hemolyticus (1 isolate). All bacteria from cultures were resistant to cefotaxime and amoxicillin, the two most common used parenteral antibiotics, and also to gentamicin. Antibiotics that had sensitivity at least 50% were pipercillin/tazobactam, meropenem, fosfomycin, cefpirome, ciprofloxacin. Fosfomycin had best sensitivity to S. aureus, while pipercillin/tazobactam had best sensitivity to E. coli. Amikacin had good sensitivity to gram negative bacteria (75%).

**Conclusions:** The most common parenteral antibiotics used at the four major departments at A. Wahab Sjahranie General Hospital Samarinda are beta lactams, cefotaxime (48.9%) and amoxicillin (24.9%) which are resistant to all cultured bacteria. Only 1.5% of patients are treated with culture-based antibiotics, while others are treated empirically without any good guidance. The most common bacteria found from culture are E. coli (24%) and S. aureus (20%). Gram negative bacteria are more common found than gram positive bacteria (60% vs 40%).

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44.051

Antibiotic Resistance and Its Molecular Mechanisms Among Pneumococci from Children with Acute Respiratory Tract Infections in Haiphong City, Northern Vietnam

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**Background:** Drug-resistant Streptococcus pneumoniae has spread worldwide since 1970s and has reached high level in southeast Asia. There are limited data concerning antibiotic resistance pattern and its molecular mechanisms published in Vietnam. Those data need being updated and well studied in order to provide a suitable prevention and treatment for pneumococcal infections.

**Methods:** Eighty two S. pneumoniae isolates were identified from hospitalized children with acute respiratory infections in HaiPhong pediatric hospital in Northern Vietnam from July 2006 to October 2007. MICs of pneumococcal isolates and resistant strains were determined using agar dilution method according to instructions of Clinical and Laboratory Standards Institute(CLSI).

Molecular mechanisms of penicillin and erythromycin resistance were studied by using three duplex PCR assays targeting genes coding for penicillin-binding proteins(pbps)1A, 2B, 2X, and mef(A)/erm(B) macrolide resistant genes, associated with development of the antibiotic resistance.

**Results:** All the 82 isolates were susceptible to amoxicillin/clavulanate and ofloxacin, 95% and 84% of the isolates reduced susceptibility to penicillin (51.3% intermediate,
43.7% resistant) and erythromycin (9% intermediate and 75% resistant) respectively. MIC<sub>90</sub> of penicillin and erythromycin were 2 mg/liter and >128 mg/liter. 75% of the isolates showed multidrug resistance.

PCR results showed 95% of the strains had at least one altered pbp in which 82% had all 3 altered pbps, 89% had macrolide resistance genes erm(B) and/or mef(A), 73% contained erm(B) gene, 17% contained both mef(A) and erm(B).

Conclusion: Penicillin and macrolide resistances among pneumococcal isolates have been increasing in the Northern part of Vietnam with an alarming level of macrolide resistance. Erm(B) mediated mechanism was predominant with a high level resistance in the region. This study emphasizes the need to have an active and larger laboratory-based surveillance for monitoring antibiotic resistance of pneumococci and other respiratory pathogens in Vietnam.

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44.052

In Vitro Antimicrobial Sensitivity Trends of Enterococci Isolated at An Italian Teaching Hospital: A 2004—2007 Prospective Report Including Over 2,700 Examined Microbial Strains

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Background: The increasing temporal trend of antimicrobial resistance among Gram-positive cocci (including Enterococci) is of concern, especially among inpatients.

Materials and Methods: The temporal trend of the in vitro antibiotic susceptibility rates was examined for all Enterococcus faecalis and Enterococcus faecium strains, isolated at our General Teaching Hospital during the years 2004—2007. The same pathogen isolated more than once from the same patient within one month, has been considered once.

Results: Among Enterococcus faecalis isolates (2,736 strains tested on the whole), the greater activity rate was achieved by linezolid (100% of tested strains), followed by telcoein (97.9—100% of strains), nitrofurantoin (96.4—98.3%), vancomycin (81.0—100%), ampicillin (90.2—91.9%), penicillin (88.8—91.5%), while unpredictable efficacy was shown by streptomycin (78.4—86.2% of strains), tetracyclines (56.8—81%), and gentamicin (59.1—71.0%), while unpredictable efficacy was shown by streptomycin (27.6—69.8% of tested strains). Sixty-six strains of vancomycin-resistant Enterococcal strains were detected, with a clearly increased trend from 2004 (7 cases) to 2007 (21 cases) (p < .001). An increased in vitro resistance rate was also detected for tetracyclines, during the four-year study period (p < .01).

Conclusions: A prospective surveillance monitoring of the in vitro antimicrobial sensitivity figures of Enterococci as relevant hospital pathogens, plays an useful role to target antimicrobial treatment and prophylaxis strategies, on local and regional basis. The emerging of resistance to the reference compounds, and that of vancomycin-resistant organisms in particular, may be also well assessed on these temporal basis, in order to address the clinical choice according to the local epidemiology and antimicrobial testing features.

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Mycoses (Poster Presentation)

45.001

Influence of Systemic Antifungal Therapy on the Candida Colonization in Medical Intensive Care Patients

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Background: The incidence of systemic fungal infections caused by non-albicans species is increasing. Colonization with Candida has been identified as an independent risk factor for invasive Candidiasis.

Methods: In a prospective study for 30 month, we analyzed samples weekly over a period of four weeks from an initial count of 411 patients (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.

Results: 41 of the patients in the study stayed in the ICU for at least 4 weeks. Of these, 24 received systemic antymycotics (mean duration 15.9 days) for proven or probable fungal infection. In the untreated group, Candida species were cultured from 29% of specimens at baseline (71% Candida albicans, 13% Candida glabrata, 17% Candida tropicalis, 4% Candida parapsilosis, 0% Candida krusei) and in 42% after 4 weeks (66% Candida albicans, 16% Candida glabrata, 0% Candida tropicalis, 16% Candida parapsilosis, 0% Candida krusei). In the group with systemic antymycotic therapy, Candida species were cultured from 66% of specimens at baseline (59% Candida albicans, 46% Candida glabrata, 6% Candida tropicalis, 3% Candida parapsilosis, 11% Candida krusei) and in 39% after 4 weeks (29% Candida albicans, 60% Candida glabrata, 0% Candida tropicalis, 13% Candida parapsilosis, 7% Candida krusei).

Conclusions: Antimycotic therapy results in a reduction in Candida colonization. This is due to a decrease in the fraction of Candida albicans whereas Candida glabrata is left unchanged. In the absence of antymycotics, Candida colonization increase and the fractions of Candida albicans and Candida glabrata remain unchanged.

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