the incidence rate of subclavian catheter increased from 48.48% to 48.48%(P < 0.05).

Conclusions: The incidence rate of CRBSI could be reduced via bundle intervention, which suggested that training, the largest sterile barrier, hand hygiene, disinfecting skin with 2% chlorhexidine, early extubation and chlorhexidine bathing can effectively prevent the incidence of CRBSI.

DECREASE MDRO BY TEAM-WORK MODEL BUNDLE CARE
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Purpose: In our hospital, MDROs account for 30.1% of health-care associated infection in 2012 and 2013. It also accounts for 12.2% of all bacteria isolated during August 2013 and January 2014. We have participated in Antibiotics Stewardship program (ASP) program since 2014. We expect to reach the goals by team work bundle care in the future.

1. Hand hygiene compliance 85% and accuracy 75%. Average compliance 84.2% and accuracy 71.2% of 323 hospitals in 2010 and 2011.
2. Health associated infection density average below 1.5%: (Reference: Taiwan health care quality index average 1.88%, in 2013).
3. Resistant strains less than 10% bacteria isolated, health care related resistant strains less than 20%.

Methods:
1. Antibiotics stewardship program (ASP) setup. 2. Establish antibiotics use standard. 3. Computer information systems for antibiotics management. 4. Education: We hold education programs for health care related membranes. 5. To make a standard of environmental cleaning and monitor system. 6. Monitor and isolation system of MDROs.

Results:
1. Hand hygiene compliance was increased to 70-87%, and accuracy was increased to 72-92% during January and August, 2014.
2. The health care-associated infection density average is 1.46% in the 6 months before ASP. It decreased to 1.30% in the 6 months after ASP. The results showed improvement and also reach our goal of less than 1.5%.
3. Rates of hospital MDROs decreased from 12.23% (half year before ASP) to 10.91% (half year after ASP), which decreased 10%.

Conclusions: Active isolation for patients indicated not only can prevent pathogens spreading, but also increase the quality of environmental safety. For those transfer to long-term care facilities, isolation information from hospital can decrease the chance of MDROs spreading. Managers’ support and team-work efforts, as well as infection control methods, are very important to decrease MDROs. We will try our best to create a safer environment for patients.

AN EFFECTIVENESS OF HIV/AIDS PREVENTION MODEL IN AKHA YOUTHS, THAILAND
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Purpose: This project aimed to develop the effective preventive model for HIV/AIDS among the youths of Akha hill tribe people in northern Thailand.

Method: This operational research was conducted and divided into two phases: the first phase aimed to determine the risk behaviors used a cross-sectional study design, following by the community participatory research design to develop the HIV/AIDS preventive model among the Akha youths. The instruments were composed of completed questionnaires and assessment forms that were tested for validity and reliability before use. Study setting was Jor Pa Ka and Saen Suk Akha villages, Mae Chan District, Chiang Rai, Thailand. Study sample were the Akha youths lived in the villages. Means and Chi-square test were used for the statistical testing.

Results: Akha youths in the population mobilization villages live in agricultural families with low income and circumstance of narcotic drugs. The average age was 16 (50.00%), 51.52% Christ, 48.80%completed secondary school, 43.94%had annual family income 30,000-40,000 baht. Among males, 54.54%drank, 39.39%smoked, 7.57% used amphetamine, first sexual intercourse reported at 14 years old, 50.00%/had 2–5 partners, 62.50% unprotected sex (no-condom). Reasons of unprotected sex included not being able to find condom, unawareness of need to use condoms, and dislike. 28.79% never been received STI related information, 6.06% had STI. Among females, 15.15% drank, 28.79% had sexual intercourse and had first sexual intercourse less than 15 year old. 40.00% unprotected sex (no-condom), 10.61%never been received STI related information, and 4.54% had STI. The HIV/AIDS preventive model contained two components. Peer groups among the youths were built around interests in sports. Improving knowledge would empower their capability and lead to choices that would result in HIV/AIDS prevention. The empowering model consisted of 4 courses a. Human reproductive system and its hygiene, b. Risk-avoid skills, family planning, and counseling techniques, c. HIV/AIDS and related STIs, d. Drugs and related laws of regulations. The results of the activities found that youths had a greater of knowledge and attitude levels for HIV/AIDS prevention with statistical significance (Chi square test = 12.87, p-value = 0.032 and Chi-square test = 9.31, p-value < 0.001 respectively).

Conclusions: A continuous and initiative youths capability development program is the appropriate process to reduce the spread of HIV/AIDS in youths, particularly in the population who have the specific of language and culture.

EFFECTIVENESS OF A REDUCED DOSE OF EFAVIRENZE PLUS 2 NRTIS AS MAINTENANCE ANTIRETROVIRAL THERAPY WITH THE GUIDANCE OF THERAPEUTIC DRUG MONITORING
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Purpose: A substantial proportion of HIV-infected patients may have unnecessarily higher plasma efavirenz (EFV) concentrations than recommended while receiving EFV-containing combination antiretroviral therapy (cART) at the currently recommended daily dose of 600 mg. A lower daily dose of (400 mg) of EFV has recently been demonstrated to be as efficacious as the recommended 600 mg when combined with tenofovir/emtricitabine in a multinational clinical trial. We aimed to use a therapeutic drug monitoring (TDM)-guided strategy to optimize the EFV dose in HIV-infected Taiwanese patients.

Materials and Methods: The plasma EFV concentrations at 12 hours (C12) after taking the previous dose were determined in HIV-infected adults who had received EFV-containing cART with viral suppression for 6 months or longer (plasma HIV RNA load [PVL] <200 copies/mL). For those with EFV C12 >2.0 mg/L, EFV was reduced to half a tablet daily. Determinations of EFV C12 were repeated 4 to 12 weeks after switch using high-performance liquid chromatography. CYP2B6*15 polymorphisms were determined using polymerase-chain-reaction restriction fragment-length polymorphism.

Results: Between April 2013 and November 2014, 159 patients (94.3% male; mean age, 39 years; 98.7% with PVL <50 copies/mL; 25.8% HBsAg-positive and 6.0% anti-HCV-positive) were switched to a reduced dose (1/2# hs) of EFV; and 42.3% of them had CYP2B6*15 or TT genotypes. The mean baseline EFV C12 before switch was 3.43 mg/L (IQR, 2.49-3.99), which decreased to 1.74 mg/L (IQR, 1.34-2.09) who had completed follow-up of C12 EFV 4 weeks after switch, with a reduction of 47.0% (IQR, 38.3-55.1%). As of 30 Nov, 2014, 97.4% of the 151 patients who had completed the first follow-up of PVL and 98.9% of the 95 patients who had completed the second follow-up achieved undetectable PVL (<50 copies/mL) following a switch to a reduced dose of EFV. The mean CD4 count increased from 576 before switch to 618 cells/mm³ at week 24 while the lipids did not change significantly after switch. More than 80% of the patients reported improvement of the symptoms related to use of full-dose EFV.
Conclusions: Switch to cART containing a half tablet of EFV (1/2#) in HIV-infected Tainan patients with higher plasma EFV concentrations who had achieved viral suppression could maintain successful viral suppression with the guidance of TDM and save medical cost.

TRENDS AND OUTCOME OF HIV-POSITIVE PATIENTS WITH LATE PRESENTATION FOR COMBINATION ANTIRETROVIRAL THERAPY IN TAIWAN: A COHORT STUDY

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Purpose: We aimed to assess the trends of late presentation for combination antiretroviral therapy (cART) and evaluate its impact on treatment response to cART in Taiwan, where nationwide access to free-of-charge cART and CD4 and plasma HIV RNA load (PVL) monitoring is provided.

Methods: Between June 2012 and October, 2014, we followed all antiretroviral-naïve HIV-positive adults who initiated cART at a university hospital in Taiwan. We collected the information on demographic and clinical characteristics, antiretroviral regimens, and CD4 and PVL at baseline and weeks 4, 12, 24, 36 and 48. Late presentation for cART was initiation of cART at CD4 counts <200 cells/mm³. Genotypic resistance assays were performed retrospectively on the HIV-1 isolates from the archived blood samples taken before cART. Antiretroviral resistance mutations were identified using the HIVdb program of the Stanford University HIV Drug Resistance Database. Multidrug resistance (MDR) was defined as having genotypic resistance to more than one class of antiretroviral agents.

Results: During the study period, 621 HIV-positive patients, 97.3% being male and with a mean age of 37.7 years, initiated cART. The baseline CD4 and PVL was 279 cells/mm³ (SD, 179) and 4.9 log_{10} (SD, 0.7) copies/ml, respectively. The overall proportion of late presentation for cART was 31.7%, which decreased from 45.9% in the first 6-month period to 19.5% in the last 5-month period. Compared with non-late presenters, late presenters were older (37.1 vs 30.1 years), more likely to be homosexual (8.6 vs 3.1%) and HBsAg-positive (16.5 vs 7.8%), and to have higher PVL (5.28 vs 4.71 log_{10} copies/ml) and aminotransferases, and more patients with opportunistic infections (15.2 vs 0.5%), leukopenia (30.3 vs 9.3%), and hemoglobin <9 g/dl (7.6 vs 0.7%). Genotypic resistance to any NRTI and Integrase inhibitor and MDR strains was more commonly seen in late presenters than non-late presenters: NRTI, 8.3 vs 2.3%; Integrase inhibitor, 9.2 vs 3.7%; and MDR, 2.7 vs 0.4%. Genotypic resistance to nRTI (6.3 vs 7.4%) or PI (2.8 vs 1.2%) was not significantly different between the two groups. A similar proportion of the patients initiated nRTI-containing regimens (92.9 vs 93.6%). Within the first 24 weeks of cART, more late presenters had to switch regimens than non-late presenters for any causes (54.6 vs 48.1%) and for resistance or unsatisfactory virological response (12.5 vs 5.5%). While the proportions of patients achieving PVL<400 copies/ml at week 24 were insignificantly lower with regimen changes made (91.2 vs 95.4%), late presenters had a higher mortality rate than non-late presenters (3.5 vs 0.7%).

Conclusions: In Taiwan, the proportion of HIV-positive patients who presented late for cART was decreasing. Late presenters had more unfavorable characteristics compared with non-late presenters for any causes and had to switch regimens than non-late presenters for any causes. Late presentation for cART was initiation of cART at CD4 counts <200 cells/mm³. Genotypic resistance to any NRTI and Integrase inhibitor and MDR strains was more commonly seen in late presenters than non-late presenters. A similar proportion of the patients initiated nRTI-containing regimens (92.9 vs 93.6%). Within the first 24 weeks of cART, more late presenters had to switch regimens than non-late presenters for any causes (54.6 vs 48.1%) and for resistance or unsatisfactory virological response (12.5 vs 5.5%). While the proportions of patients achieving PVL<400 copies/ml at week 24 were insignificantly lower with regimen changes made (91.2 vs 95.4%), late presenters had a higher mortality rate than non-late presenters (3.5 vs 0.7%).

MOLECULAR DETERMINANTS OF HUMAN DEFENSE AGAINST AVIAN INFLUENZA VIRUS INFECTION

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Purpose: Avian influenza A viruses typically do not efficiently replicate in mammalian cells. The substitution of glutamic acid (E) for lysine (K) at residue 627 of the viral polymerase basic 2 (PB2) of avian H5N1 viruses has been identified as a host-range and virulence determinant for mammal infection. Although the PB2 627 variation is regarded as a species-specific signature of influenza A viruses, host factors associated with PB2 627 have not been fully investigated. Therefore, investigating the mechanisms through which viruses shift their host tropism is critical for preventing and controlling viruses from crossing the species barrier, the primary cause for the emergence of new viruses.

Methods: Immunoprecipitation followed by differential proteomic analysis, was implemented to probe PB2627K-associated (human) and PB2627E-associated (avian signature) proteins and identify copurifying proteins through mass spectrometry. This interaction and its possible effect on the PB2 627 variation is regarded as a species-specific signature of influenza A viruses, host factors associated with PB2 627 have not been fully investigated. Investigating the mechanisms through which viruses shift their host tropism is critical for preventing and controlling viruses from crossing the species barrier, the primary cause for the emergence of new viruses.