At a false-positive rate (FPR) of 5%, specificity for R5-tropic virus was also high (range: 85.7%-95.3%), but came at the expense of sensitivity for X4-using virus (range: 36.7%-66.7%). One study compared the effectiveness of both genotypic tropism testing and ESTA in predicting virological response to the CCR5-antagonist maraviroc. The study found in each screening group, a similar proportion of patients achieved a viral load < 50 HIV-1 RNA copies/mL by Week 48. **CONCLUSIONS:** In the absence of a 'gold standard', clinical response to CCR5-anatagonist therapy offers the best measure of diagnostic performance in HIV-1 tropism testing. The results of this review indicate that genotypic sequencing of the V3 loop is as capable of predicting response to CCR5-antagonist therapy as the current diagnostic standard, ESTA. In addition, of the bioinformatic algorithms reviewed here, the geno2pheno model set at 5-10% FPR offered the best balance between sensitivity and specificity. This evidence provides further support for the use of genotypic tropism testing in routine clinical practice.

PIN3

EVALUATION OF THE RELATIONSHIP BETWEEN VANCOMYCIN TROUGH CONCENTRATION AND CLINICAL OUTCOME IN HOSPITALIZED PATIENTS WITH ORSA BACTEREMIA AND THE RELATIONSHIP BETWEEN VANCOMYCIN TROUGH CONCENTRATION AND NEPHROTOXICITY

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OBJECTIVES: To evaluate the relationship between vancomycin trough concentration and the clinical outcome in hospitalized patients with ORSA bacteremia, and to assess the relationship between vancomycin trough concentration and nephrotoxicity. **METHODS:** Adult patients admitted to National Cheng-Kung University Hospital during January 20, 2006 and July 31, 2006 and treated with vancomycin for ORSA bacteremia were eligible for this prospective observational study. On the fourth day after vancomycin use, vancomycin concentration was monitored and blood culture was repeated. Regular biochemistry and blood test on day 4, 7, 11, 14, daily highest temperatue and other associated data were collected. The primary endpoints are the clinical outcome and the change of serum creatinine concentration. **RESULTS:** Nineteen patients were enrolled during this period. On day 4, trough concentration of vancomycin was associated with the rate of defervescence. The afebrile rate were 85.7% and 33.3% among patients with trough level of above and below 15 μg/mL, respectively ($P = 0.05$). For the ratio of vancomycin trough concentration to MIC, patients with ratio greater than 10 had a trend of a higher defervescence rate in comparison with those with ratio less than 10 (77.8% vs. 30%, $P = 0.07$). In addition, nephrotoxicity was found in five patients, but the mean trough concentrations were not significantly different between the nephrotoxic and non-nephrotoxic groups. **CONCLUSIONS:** The result of the study shows that higher serum vancomycin trough concentration is associated with the defervescence rate on day 4 when vancomycin is used to treat ORSA bacteremia. Besides, under the condition of regular therapeutic drug monitoring, the nephrotoxicity during vancomycin therapy doesn't seem to be associated with trough concentration, but it needs studies with large sample size to evaluate.

PIN4

THE IMPACT OF PHARMACIST-LED ANTIMICROBIAL STEWARDSHIP IN INTENSIVE CARE UNITS IN A REGIONAL HOSPITAL IN TAIWAN

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OBJECTIVES: Large antimicrobial consumption in intensive care units (ICUs) contributes heavy health care burden in Taiwan. This study evaluates the short term influence of pharmacist-led antimicrobial stewardship (PLAS) in ICUs. **METHODS:** A prospective PLAS program was implemented in medical and surgical ICUs, including dose optimization (renal dose monitoring and therapeutic drug monitoring), streamlining or de-escalation of therapy, antimicrobial order forms, and antimicrobial treatment duration review, which any antimicrobial duration over 7days was reviewed. Data collection was from October 19, 2011 to December 2, 2011. Patients who admitted to ICU and received at least one parenteral antimicrobial were included. Outcomes included suggestion implementation rate of pharmacist interventions and cost that saving from dose optimization. Feedbacks of non-accepted suggestions were also addressed. **RESULTS:** Sixty-two (21%) of study population received 88 suggestions. Sixty-two (70.5%) suggestions were implemented. The majority of suggestions is duration review (30.7%) followed by streamlining or de-escalation of therapy (30.6%) and dose optimization (27.3%). There was 76,238 NTDs saving from renal dose monitoring. Further efforts we can make are found from reasons of non-accepted suggestion. For example, education on prophylactic antibiotics and antimicrobial renal dosage adjustment should be provided. Since, we found that prolonged (>3days) post-operation antimicrobial prophylaxis until inserted drainage lumen removed and refusing dose increasing because impaired renal function was expected by doctors. Involvement in multidisciplinary specialists is required due to denials from no recommendation from infectious disease physicians. **CONCLUSIONS:** A PLAS efforts rationale antimicrobial utilization and leads to potential reduction in both the incidence of adverse effects and the burden of health care. Through feedback from refused suggestion, however, we found that antimicrobial stewardship should include a multidisciplinary team, especially incorporating with infectious disease physicians.

PIN5

IMMUNE RECONSTITUTION INFLAMMATORY SYNDROME (IRIS) INCIDENCE IN PATIENTS STARTING ANTIRETROVIRAL THERAPY (ART) EARTLIER VERSUS LATER DURING TUBERCULOSIS (TB) THERAPY: A SYSTEMIC REVIEW AND META-ANALYSIS OF COHORT SUTDIES

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OBJECTIVES: The optimal timing of initiation of Antiretroviral Therapy (ART) in ART naïve patients with HIV and TB co-infection remains inconclusive. IRIS incidence is one of the most important outcomes that we need to consider when making a decision on the time of initiating ART. This study compared the IRIS incidence in patients initiating ART earlier (<=2 months after the start of tuberculosis therapy) versus later (>2 months after the start of tuberculosis therapy). We also examined the differences of IRIS incidence between early and late arms in the Resources limited settings (RLS) and the Non Resources limited settings (NRLS). **METHODS:** Data for this meta-analysis were extracted from Pubmed/Medline, Embase, Cochrane database of systematic review, Cochrane Central Register of Controlled Trials, International Pharmaceutical Abstracts, ClinicalTrials.gov and Google Scholar from year 1986 to 2011. We searched by using a combination of terms: HIV, HIV infections, acquired immunodeficiency syndrome, tuberculosis, TB, HAART, highly active antiretroviral therapy, ART, antiretroviral therapy. Out of the 11300 studies found in the search, five cohort studies met the inclusion criteria. Among the five studies, two were located in RLS and three were located in NRLS. We conducted a meta-analysis of these five studies by using STATA SE version 12. **RESULTS:** Meta-analysis results showed that overall, people treated with ART earlier during TB therapy had a 12.9% lower risk of IRIS incidence compared to people treated later (RR, 0.871; 95% CI, 0.831-0.912). In addition, the differences of IRIS incidence between early and late arms were significant in both the Resources limited settings (RLS) and the Non Resources limited settings (NRLS). **CONCLUSIONS:** Initiating antiretroviral therapy less than 2 months after the start of tuberculosis therapy is associated with a significantly lower risk of IRIS incidence, regardless of the locations.

PIN6

JAPANESE ENCEPHALITIS IN ASIA: CLINICAL BURDEN AND COST-EFFECTIVENESS OF VACCINATION PROGRAM

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OBJECTIVES: To report clinical burden of Japanese encephalitis (JE) in Asia and cost-effectiveness of JE vaccination program. **METHODS:** Systematic literature searches were conducted using Embase®, MEDLINE®, WHO, and Google scholar platforms to identify relevant studies in patients with JE. Eligibility of trials was assessed by two reviewers with any discrepancy reconciled by a third, independent reviewer. **RESULTS:** A total of 10 studies out of 41 retrieved, met the inclusion criteria for the clinical review. Approximately 35,000-50,000 JE cases and 10,000–15,000 deaths due to JE were reported every year in Asia. Incidence of JE was high in China and India, with China accounting for 50% of the JE cases reported worldwide. The incidence of JE in China was reported to be 0.01-1.53 residents/year/100,000. The number of JE cases reported in China, India, Nepal, Sri Lanka, and Bangladesh were 5,000-10,000, 1,500-4,000, 1,000-3,000, 100-200, and 56, respectively. JE caused 12,038 and 2,496 deaths in Southeast Asia and Western Pacific, respectively (2008). JE was associated with 491,797 disability-adjusted life years (DALYs) in the Southeast Asia and 185,573 DALYs in the Western Pacific region (2004). Four studies out of 59 retrieved, met the eligibility criteria for evaluating cost-effectiveness of JE vaccination. JE vaccination prevented 117 cases and 12 deaths (Vietnam), 103 cases and 18 deaths (Thailand), 420 cases and 105 deaths (China), and 175-316 cases and 36-65 deaths (India). Total savings in the direct medical costs witnessed as a consequence of JE vaccination were $51,122 (Vietnam), $58,776 (Thailand), $614,762 (China), and $178,558-$319,627 (India). **CONCLUSIONS:** JE has lead to significant morbidity in survivors and mortality in Asian countries. Existing evidence from cost-effectiveness studies demonstrated that vaccination program markedly reduced the burden of JE in Asia.

PIN7

ESTIMATE OF INFECTIOUS DISEASE BURDEN ATTRIBUTABLE TO CLIMATE CHANGE

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OBJECTIVES: To assess the incidence and distribution of infectious diseases which have been markedly affected by climate change. **METHODS:** Literature searches were performed using Embase®, MEDLINE®, Google Scholar, and WHO website. **RESULTS:** Current evidence suggests that inter-annual and inter-decadal climate variability have a direct impact on the epidemiology of infectious diseases. According to WHO, since mid-1970s, climatic changes have caused annually over 150 000 deaths and an approximately 5 million disability-adjusted life-years, mainly in developing countries. Malaria has been considered as an extremely climate-sensitive disease. A temperature rise of 2°C-3°C increases the risk of malaria by 3%-5%. Across the world, the incidence cases of malaria increased from 233 000 in 2000 to 244 000 in 2005, with highest incidence observed in Africa. The West Nile virus (WNV) disease is considered as an emerging epidemic in the US. More than 7000 neuroinvasive WNV disease cases were reported in the US from 1999-2004. Parallel to rising temperatures, the US has recorded a 41% increase in vibrio infection rate from 1996-2006. In continental Europe, a temperature rise of 6°C above the mean resulted in an estimated 30% reported cases of salmonellosis. In Russia, rising temperatures from 2001 have increased the incidence of tick-borne encephalitis (TBE) by 10-fold within a decade. Korea's climatic variability has also been positively correlated with the incidence cases of malaria, Vibrio vulnificus sepsis, scrub typhus, leptospirosis, and Hantavirus infection during 2001-2008. Further, in 2009-2010, government officials of Europe have predicted that borreliosis, WNV fever,