Antimicrobial usage in Saudi Ministry of Health Hospitals: Data from 2016 and 2017

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Background: An initial objective of the current study was to identify antimicrobial prescribing behavior in Saudi Ministry of Health (MOH) hospitals. This study is the first of its kind that covers hospitals from all Saudi regions.

Materials/methods: Two Point Prevalence Surveys (PPS) were performed for 26 and 21 participating MOH hospitals during May in 2016 and 2017, respectively. Hospitals and patients' information were collected for all inpatients. Additional information about antibiotic treatment and infections were gathered. All data were collected by using the standard forms from Global-PPS.

Results: A total of 3240 antibiotic doses were administrated to 2182 patients during 2016 PPS and 2476 doses were administrated to 1540 patients during 2017 PPS. The rates of antibiotic usage were 46.9% and 41.6% in 2016 and 2017, respectively. Approximately, four out of ten patients were treated in surgical departments. Most antibiotics for surgical prophylaxis were administrated for more than 24 hours (78% and 79.1%; respectively), The most commonly prescribed antibiotic group was 3rd generation cephalosporine (17.2% and 15.7%; respectively). The rates of adherence to antibiotics guidelines recommendations were 48.1% and 59%. The indications reasons for the antibiotics were not documented in the patients' notes for almost half of the prescriptions during the two PPSs. Furthermore, requests for the timeframe to stop/review antibiotic usage were only recorded in 56.3% and 49.9% during 2016 and 2017; respectively.

Conclusions: Several areas for improvement were identified that include wide use of broad-spectrum antibiotics; particularly ceftriaxone, prolonged use of antibiotics for surgical prophylaxis and poor documentation for reasons and stop or review date. Addressing each of these indicators would be pivotal to the success of any governmental intervention designed to enhance the use of antibiotics.

https://doi.org/10.1016/j.jiph.2018.10.123

Patterns of Pulmonary manifestations of HIV/AIDS among patients admitted to Rashid Hospital, Dubai; 2015–2017

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Background and purpose: The Respiratory system is a major target for HIV and the virus has been isolated from upper and lower respiratory tract. Having knowledge of this strong link between the virus and the respiratory system and identifying common presentations will help managing physician in better patient management as well as earlier initiation of appropriate antimicrobial therapy when entertaining an infectious process.

Methods: Retrospective Data was collected from patients with HIV/AIDS admitted to Infectious Disease Unit; Rashid Hospital; between January 2015-December 2017. Variables included patient's demographics, nationality, CD4 upon first admission; baseline chest imaging; respiratory samples microscopy/culture /AFB stain and culture and TB PCR.

Results: Between January 2015 and December 2017; a total of 131 patients with HIV/AIDS were admitted to our unit. 77/131 (58.77%) had a respiratory complaint as the main indication for admission. only 4/77 (5.2% had a normal chest X ray). 38/77 (49.4%) had confirmed mycobacterium Tuberculosis with MDR-TB diagnosed in two patients only. 19/77 (24.7%) had Pneumocystis Jirrovicci Pneumonia. 13/77 (16.9%) had Bacterial Community-acquired pneumonia. Two patients had atypical mycobacterium infection and two other patients had a combined infectious process. No microbiological diagnosis was made in remaining 4 patients. In patients with Pulmonary TB; sputum stain positivity was 60.5% for first sample.

Conclusions: Almost two thirds of our patients were admitted secondary to a respiratory process and Pulmonary Tuberculosis was the confirmed etiology in almost half of the patients. in comparison to previous data from our hospital; there has been a rise in PJP cases reflecting late diagnosis of HIV/AIDS or lack of adherence to prescribed ART or chemoprophylaxis.

Identifying Pulmonary Tuberculosis as major pathogen in majority of cases in our area helps in early initiation of ATT and proper Infection Control measures and reduced the need for broad spectrum antibiotics.

https://doi.org/10.1016/j.jiph.2018.10.124

Isolation and Identification of Candida species Among Women at Wadi al Dawasir Region of Saudi Arabia

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Background: Candida is a yeast like fungus that belongs to the normal microbiota of gastrointestinal tract and reproductive mucosa. Hence, a majority of the healthy population may be prone to the most common fungal infection such as candidiasis. Candidiasis or thrush is a fungal infection caused by any of the species from the genera Candida. Worldwide, in women, vaginal candidiasis forms a significant part of urogenital infections with a high recurrence rate. These infections range from superficial oral thrush or vaginitis to more deep-seated systemic ones that is life threatening.

Methods: This was a cross sectional study conducted at the general hospital of Wadi Al Dawaser, Riyadh, Saudi Arabia. The high vaginal swabs (HVS) of women patients were received at the microbiology laboratory for fungal culture and identification. Gram staining and culture identification, wet mount with 10% KOH and germ tube test was done to confirm for Candida spp. The antifungal susceptibility profile was done for the identified isolates.

Results: Out of 208 high vaginal swabs received at the hospital, 71 (34%) were positive for culture. Nearly half of the specimens (53%) that were culture positive were identified as Candida spp. The antifungal agents tested on these isolates were sensitive. However, higher incidence of Candida culture positive isolates were seen among non-pregnant, non-users of antibiotics and non-diabetic patients.

Conclusion: The predominant species was Candida albicans among the HVS samples. Treatment based on laboratory diagnosis rather than an empirical approach will facilitate the rational use of antibiotics and to reduce the selection pressure for resistant

isolates. However, there is a need for further risk assessment associated with Candida infections.

https://doi.org/10.1016/j.jiph.2018.10.126

Two-drug regimen of dolutegravir plus lamivudine (DTG+3TC) is noninferior to dolutegravir plus tenofovir/emtricitabine (DTG+TDF/FTC) at 48 weeks in antiretroviral treatment-naive adults with HIV-1 infection: subgroup analyses in the GEMINI studies

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Background and Purpose: In the GEMINI studies, the efficacy of DTG+3TC was recently shown to be noninferior to DTG+TDF/FTC at 48 weeks in treatment-naive adults based on a 10% non-inferiority margin. We present efficacy and safety by demographic and baseline plasma HIV-1 RNA and CD4+ cell count subgroups.

Methods: GEMINI-1&-2 are identical, global, double-blind, Phase III studies that randomized treatment-naive adults with Screening plasma HIV-1 RNA ≤500,000 c/mL to treatment with DTG+3TC or DTG+TDF/FTC, stratified by Screening plasma HIV-1 RNA and CD4+ cell count (ClinicalTrials.gov: NCT02831673/NCT02831764). The primary endpoint was the proportion of participants with plasma HIV-1 RNA <50 c/mL at Week 48 (Snapshot algorithm); estimates and CIs were based on a stratified analysis using Cochran-Mantel-Haenszel weights. The subgroup analysis was unadjusted.

Results: 714 and 719 adults were randomized and treated in GEMINI-1&-2, respectively. Efficacy results across age, gender, race, or baseline HIV-1 RNA were generally consistent with the overall analysis. Response rates in participants with baseline HIV-1 RNA >100,000c/mL were high and similar between arms. Six participants on DTG+3TC and 4 on DTG+TDF/FTC met protocol-defined virologic-withdrawal criteria through Week 48; none had treatment-emergent INSTI- or NRTI-resistance mutations. Overall rates of AEs were similar between arms, with low rates of withdrawals due to AEs in both arms (GEMINI-1&-2 pooled: DTG+3TC 15/716 [2%] vs DTG+TDF/FTC 16/717 [2%]). More drug-related AEs were reported with DTG+TDF/FTC (GEMINI-1&-2 pooled: DTG+3TC 126/716 [18%] vs DTG+TDF/FTC 169/717 [24%]). The frequency of AEs was generally similar across subgroups.

Conclusions: Subgroup analyses at Week 48 of GEMINI-1&-2 based on baseline disease and demographic characteristics were generally consistent with overall study results, demonstrating noninferiority of DTG+3TC to DTG+TDF/FTC in treatment-naive adults with Screening HIV-1 RNA ≤500,000 c/mL. These results further demonstrate DTG+3TC is an option for initial treatment of HIV-infected patients across a spectrum of disease characteristics and patient populations.

https://doi.org/10.1016/j.jiph.2018.10.127

Epidemiology of Invasive Pneumococcal Disease in the Kingdom of Saudi Arabia – A Rapid Review of the Literature

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a. Background and Purpose: A literature review of the epidemiology of Invasive Pneumococcal Diseases (IPD) in the Kingdom of Saudi Arabia will provide a synthesis of available evidence to inform choice of available vaccines (PHiD-CV and PCV-13).

b. Methods: A rapid review of IPD epidemiology literature in the Kingdom was conducted. Eligibility criteria included studies conducted in children (aged < 5 years) with diagnosis of meningitis, bacteraemia and sepsis. Data on adults and mass gatherings were excluded. Manual and Embase searches were conducted. Study inclusion date was from 1st January 1981 to 29th July 2018. Studies reported in English language were reviewed. Key study design characteristics of studies included was abstracted. Descriptive statistics were used to summarise results across studies.

c. Results and Discussions: Among the 20 publications meeting the eligibility criteria, 11 were from single-centre studies, 9 from multisite studies. Incidence of IPD cases ranged from 0.8 per 1000 (1990–1994) to 50 per 1000 children (1995–2000). One study reported incidence data pre- (7.2 per 100,000) and post-vaccine introduction (2.15 per 100,000). Eight studies reported IPD seroprevalence and 19 studies reported antibiotic susceptibility patterns. By year 2000, serotypes 3, 4, 6A, 9V, 14, 15, 19, 19A, 19F and 23F were most prevalent. Decline in serotypes 3, 4, 6A, 9V, 19A was reported after PCV-13 introduction in 2010. Serotypes 4, 6B, 18C, 19, 19F and 23F were still frequently isolated by 2012. Multi-drug resistance ranged from 7.10% (1999–2003) to 63% (2007–2009).

d. Conclusions: Reduction in overall IPD in the Kingdom, following introduction of a pneumococcal vaccine with more than 98% coverage, is consistent with the global experience (PHiD-CV and PCV-13). Variability in local epidemiology may be due to differences in study methods. IPD sentinel surveillance is desired in the Kingdom. This rapid review provides expedient evidence for policy makers in the Kingdom.

Funding: GlaxoSmithKline Biologicals S.A.

https://doi.org/10.1016/j.jiph.2018.10.128