continue or whether the decrease in antibiotic utilization in the recent months will lead to similar decrease in MIC.

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164. Restriction of Antimicrobials Dispensing without Prescription on a National Level: Impact on the Overall Antimicrobial Utilization in Community Pharmacies in Saudi Arabia
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Session: P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background. High rates of non-prescription dispensing of antimicrobials has led to a significant increase in antimicrobial overuse and misuse in Saudi Arabia (SA). The objective of this study was to evaluate antimicrobial utilization following enforcement of a new prescription-only antimicrobial dispensing policy in the community pharmacy setting in SA.

Methods. Data were extracted from the IQVIA database between May 2017 and May 2019. Antimicrobial consumption rate based on the sales, defined daily dose in grams (DDD), DDD/1000 inhabitants/day (DID), and antimicrobial claims for pre-policy (May 2017 to April 2018) and post-policy (June 2018 to May 2019) periods was assessed.

Results. Overall antimicrobial utilization slightly declined (~9-10%) in post-policy vs. pre-policy period (sales, 31,334 vs. 34,492 thousand units; DDD, 183,134 vs. 202,936 thousand grams), with an increase in the number of claims (~16%) after policy implementation. There was a sudden drop in the consumption rate immediately after policy enforcement; however, the values increased subsequently, matching closely to the pre-policy values. Consumption patterns were similar in both periods. Penicillins were the most commonly used antimicrobial (sales, 14,700 - 11,648 thousand units; DDD, 71,038 - 91,227 thousand grams; DID, 2.88 - 3.78). For both the periods, the highest dip in utilization was observed in July (sales, 1,027 - 1,559 thousand units; DDD, 6,194 - 9,399 thousand grams), while the highest spike was in March/October (sales, 3,346 - 3,884 thousand units; DDD, 22,329 - 19,453 thousand grams).

Conclusion. Non-prescription antimicrobial utilization reduced minimally following policy implementation in the community pharmacy setting across SA. Measures to aid effective implementation of prescription-only regulations are necessary.

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165. Decreased Antimicrobial Consumption and Decreased Rates of Multi-drug Resistant Organisms Following Onset of the COVID-19 Pandemic: Experience from an Australian Tertiary Hospital
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Session: P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background. Current guidelines recommend empiric antibiotics be used only for severe cases of coronavirus disease 2019 (COVID-19) or in cases where there is high clinical suspicion for bacterial co-infection. Level of adherence to guideline-recommended prescribing is unknown and high rates of antimicrobial prescribing may lead to increased development of resistance.

Methods. We reviewed antimicrobial prescribing patterns for patients with COVID-19 managed at The Alfred Hospital in Melbourne, Australia in 2020. Adherence to World Health Organization (WHO) guideline-based prescribing was assessed by manual review of case notes. Monthly hospital-wide antibacterial consumption April-Dec 2020 (post-pandemic period) was compared to Jan 2019 - Mar 2020 (pre-pandemic period), measured as days of therapy (DOT) per 1000 patient-days. Rates of multi-drug resistant organisms (MBRs) (including MRSA, VRE, CPE, ESBL) were compared between months in 2019 and 2020 after antibiotic onset (April 2020) and expressed as isolates per 1000 patient-days.

Results. 147 patients were managed for COVID-19 in 2020 at our centre. 101 patients required hospital admission and 56 (39%) were classified as either severe or critical in severity. 80 (54%) patients received empiric antimicrobial treatment, including 78/101 (77%) of hospital inpatients and 24/26 (92%) of ICU-admitted patients. 59 (73%) of antimicrobial prescriptions were adherent to WHO guidelines. Monthly antibacterial consumption was significantly lower post-pandemic than in the pre-pandemic period (mean 853 vs 902 DOT/1000 patient-days, P=0.0086). Antimicrobial use patterns varied, with significant decreases in commonly used antibiotics such as ceftriaxone, piperacillin-tazobactam, azithromycin and ciprofloxacin but no change in vancomycin or meropenem (Figure 1). There was a mean decrease of 0.77 MRO isolates/1000 patient-days (P=0.026) when each month in 2020 was compared with the corresponding month in 2019 (Figure 2).

Antibacterial consumption in 2019 and 2020 by month, expressed as days of therapy/1000 patient-days.

Rates of isolated multi-drug resistant organisms in 2019 and 2020 by month, expressed as isolates/1000 patient-days.

Conclusion. A high proportion of admitted patients with COVID-19 received empiric antibiotics. In spite of this, we observed a significant reduction in total antimicrobial consumption and reduced rates of MRO isolation in the post-pandemic period.

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166. Evaluation of Daptomycin Prescribing Practices Based on Microbiologic Susceptibility Determination of “Susceptible-Dose Dependent” (SDD) Category
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Session: P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background. Recent changes in CLSI microbiologic interpretations of daptomycin and enterococci include the “susceptible-dose dependent” (SDD) category. The effectiveness of SDD for directing clinicians to employ higher dosing of daptomycin is unknown. The study objective was to determine if implementation of SDD paired with a comment recommending higher doses of daptomycin (8-12mg/kg) and ID consultation in 2019 was associated with changes in rates of daptomycin use and prescribed doses for enterococcal bloodstream infections (BSI).

Methods. Single-center, retrospective cohort study of adult inpatients with enterococcal BSI and daptomycin susceptibility results reported from Aug 2016-Jul 2020. Chart review was performed to collect demographics, source of infection, and clinical management strategy. Rate of daptomycin use for definitive therapy (antimicrobial on day 4 after final susceptibilities) and median prescribed dose were compared for BSI caused by S and SDD isolates. Annual (Aug 1-Jul 31) trends in infections and daptomycin use were tabulated.

Results. 189 blood cultures were reviewed, yielding 56 unique episodes of enterococcal BSI. Patients had a mean age of 59 years and majority had an
immunocompromising disease or medication. Of the cases in which it was a clinically appropriate option, clinicians selected daptomycin for definitive treatment in 81% of S and 71% of SDD cases (p = 0.46, Chi-square). Median daptomycin dose prescribed was 10mg/kg for both interpretations; dose range was 6-12mg/kg for S and 9.5-12mg/kg for SDD isolates. No temporal trend in prescribed dose noted over the 4-year study period. Repeat blood cultures performed in 50/56 (89%). Within 90 days, rates of relapse were low but mortality was 26/56 (46%).

Table 1. Infection and Treatment Characteristics

| Characteristic                  | No. (%)   |
|---------------------------------|-----------|
| Age, mean (SD)                  | 59 (11)   |
| Sex                             |           |
| Male                            | 33 (59%)  |
| Female                          | 23 (41%)  |
| Proportion with Obesity (>150% BW) | 29 (53%)  |
| Immunocompromising condition    |           |
| Malignancy                      | 24 (43%)  |
| Solid Organ Transplant          | 7 (13%)   |
| Hematologic Stem Cell Transplant| 2 (4%)    |
| Autoimmune Disease              | 1 (2%)    |
| Immunocompromising medication   |           |
| None                            | 29 (52%)  |
| Active chemotherapy             | 25 (45%)  |
| Chronic kidney disease          | 6 (11%)   |
| Calcium antagonist               | 4 (7%)    |
| Source of infection             |           |
| Unknown                         | 25 (45%)  |
| Central Venous Line             | 7 (13%)   |
| Endocarditis                    | 2 (4%)    |
| Intrabdominal                   | 16 (29%)  |
| Pulmonary                      | 1 (2%)    |
| Osteomyelitis                   | 2 (4%)    |
| Skin and Soft Tissue infection  | 1 (2%)    |
| Urinary Tract infection         | 2 (4%)    |
| Enteroococal isolates           |           |
| E. faecium                      | 51 (91%)  |
| E. faecalis                     | 5 (9%)    |
| Daptomycin Interpretation       |           |
| Susceptible                     | 37 (66%)  |
| SDD                             | 14 (25%)  |
| Intermediate                    | 5 (9%)    |
| Definitive treatment            |           |
| Daptomycin                      | 44 (79%)  |
| Linezolid                       | 12 (21%)  |
| Repeat blood cultures           | 50 (89%)  |
| Duration of bacteremia, days median (range) | 2 (0-75-11.32) |
| Clinical outcomes               |           |
| Relapse within 90 days          | 3 (9%)    |
| Death within 90 days            | 26 (46%)  |

Chart 1. Frequency of prescribed daptomycin dose (mg/kg) for susceptible (A) and SDD (B) enterococcal BSI isolates.

No difference detected in rate of daptomycin use nor median prescribed dose based on microbiologic interpretation. While the majority of doses were adequate (10mg/kg) based on current guidance for enterococcal BSI, the use of a directive comment to guide dosing and ID consultation may have recused outliers. Additional data is needed to characterize the impact of specific microbiologic interpretations on clinician prescribing and determine the most effective messaging strategies.

Disclosures. David J. Weber, MD, MPH, PDI (Consultant)

167. Incidence of Acute Kidney Injury with Aminoglycoside Impregnated Foreign Body Implantation
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Session: P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background. During orthopedic surgeries, antibiotic impregnated cement is sometimes used to prevent infection. Elution from these cements can lead to systemically detectable levels of aminoglycosides, a known adverse effect of which is nephrotoxicity. The purpose of this study is to determine if the implantation of aminoglycoside impregnated cement is associated with subsequent development of Acute Kidney Injury (AKI).

Methods. A retrospective chart review from 1/1/2018-1/1/2021 was conducted to identify a relationship between aminoglycoside impregnated cement and subsequent development of AKI. Data were extracted from Electronic Health Records (Epic) and SAP Business Objects Web. All patients with knee or hip arthroplasty or hardware removal procedures conducted at a Legacy Health facility during the specified time frame were included. Patients were excluded from the study if < 2 serum creatinine levels were drawn during that hospitalization, AKI occurred prior to the procedure, or dialysis was required at baseline. The primary outcome was development of AKI, a > 150% increase from baseline serum creatinine according to the Acute Kidney Injury Network (AKIN) criteria. The power level was set to 80% with an alpha level of 0.05. A multiple regression analysis was conducted to control for confounding variables.

Results. A total of 2229 patients were included (591 received aminoglycoside cement,1638 did not). Aminoglycoside impregnated cement implantation was not associated with an increased incidence of AKI (1.5% versus 2.3%, P = 0.25). After controlling for covariates, aminoglycoside cement was not associated with development of AKI (adjusted OR 0.68, P = 0.32).

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168. Syndrome-Based Analysis of Oral Antimicrobial Stewardship Opportunities at Hospital Discharge
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Session: P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background. Suboptimal oral antibiotic prescriptions (OAPs) are prevalent at discharge and contribute to treatment failure, resistance, toxicity, and excess costs. Syndrome-specific prescribing patterns have not been widely described or identified and are likely multifactorial. Given the prevalence of OAPs, at least 60% of patients were excluded due to omission of lab draws once discharged. Patients admitted for longer hospitalizations were more likely to have multiple serum creatinine draws during hospitalization, and likely had multiple comorbid conditions or complications, intravenous therapy, and predisposing AKI development.

Methods. A retrospective chart review from 1/1/2018-1/1/2021 was conducted to identify suboptimal oral antibiotic prescriptions at discharge. OAPs for urinary tract infection (UTI), skin and soft tissue infection (SSTI), and lower respiratory tract infection (LRTI). A multiple regression analysis was conducted to control for confounding variables.

Results. A total of 2229 patients were included (591 received aminoglycoside cement,1638 did not). Aminoglycoside impregnated cement implantation was not associated with an increased incidence of AKI (1.5% versus 2.3%, P = 0.25). After controlling for covariates, aminoglycoside cement was not associated with development of AKI (adjusted OR 0.68, P = 0.32).

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