1086. Antimicrobial Stewardship: From Bedside to Man's Best Friend

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Background. Antimicrobial stewardship plays an integral role in ensuring appropriate antimicrobial use in the inpatient hospital setting and is now required by The Joint Commission. Although it is well established that antimicrobial misuse and overuse has societal and ecological implications, the same regulations do not yet apply to our veterinary and agricultural counterparts.

Methods. At The Ohio State University Wexner Medical Center (OSUWMC), the Antimicrobial Stewardship Program (ASP) was created in 2007. A partnership was formed with The Ohio State University Veterinary Medical Center (OSUVMC) in 2017 and was leveraged through a pre-existing campus-wide One Health initiative. The goal was to develop a comprehensive Veterinary Hospital ASP. "The Core Elements of Hospital Antibiotic Stewardship Programs" (Centers for Disease Control and Prevention) and "The Core Principles of Antibiotic Stewardship in Veterinary Medicine" (American Veterinary Medical Association) were also referenced for guidance.

Results. Specific initiatives within the OSUVMC ASP were modeled after similar interventions in the OSUWMC including development of antibiotic use guidelines by animal type for commonly encountered infections, antimicrobial utilization tracking, antibiogram creation, and both active and passive surveillance of targeted resistant pathogens. A mobile-friendly website was created to allow providers easy access to these ASP tools. Overall antimicrobial prescriptions decreased 22.4% following the first year of program implementation. Planning is currently underway for an ASP outreach program to local veterinary practices to increase awareness of ASP and improve antimicrobial prescribing. A parallel outreach program with rural Ohio hospitals is underway at OSUWMC.

Conclusion. A comprehensive veterinary hospital ASP was successfully implemented in collaboration with OSUWMC counterparts using successful human interventions applied in the animal setting. Optimizing antimicrobial use and resistance at both sites will likely prevent resistance transmission between these geographically proximate hospitals. Sharing the details of our approach may benefit other institutions looking to expand their stewardship reach.

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1087. Fluoroquinolone Prophylaxis vs. No Bacterial Prophylaxis in Hospitalized Neutropenic Patients Undergoing Induction Chemotherapy for Acute Myeloid Leukemia

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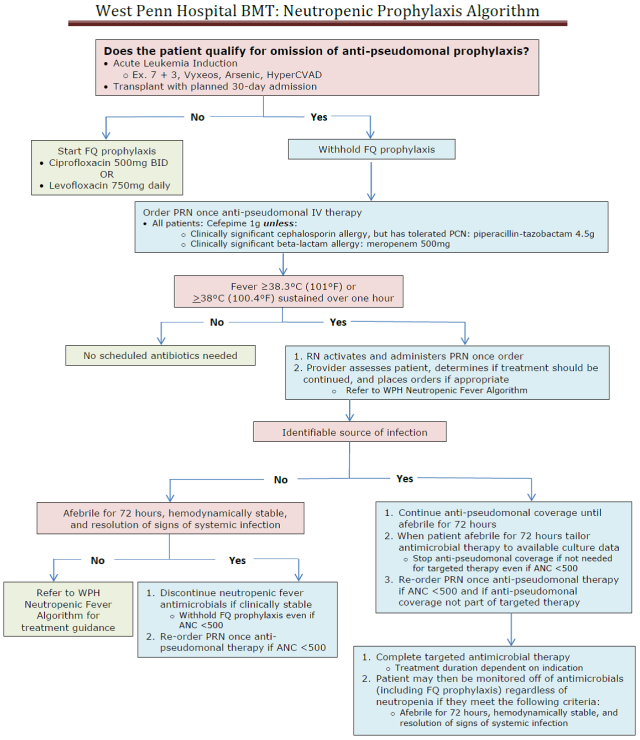
Background. Despite evidence to support outpatient anti-pseudomonal fluoroquinolone (FQ) prophylaxis in neutropenic patients, limited data exist to support this for inpatients undergoing induction chemotherapy for acute myeloid leukemia (AML). At our institution, we implemented an initiative to replace FQ prophylaxis with a conditional order for an anti-pseudomonal β-lactam to be given if a fever occurred.

Methods. A retrospective chart review was conducted to analyze the outcome differences between patients receiving FQ prophylaxis (pre-intervention) and those who had a conditional order for an anti-pseudomonal β-lactam in place of FQ prophylaxis (post-intervention). Patients were included if they were ≥18 years of age and were newly diagnosed with AML undergoing induction chemotherapy. The primary outcome was 90-day all-cause mortality. Secondary outcomes included the number of patients requiring ICU admission and rate of bacteremic episodes caused by any pathogen and from a Gram-negative rod (GNR). Additionally, ciprofloxacin susceptibility of these pathogens was analyzed.

Results. There were 35 and 26 patients in the pre- and post-intervention groups, respectively. Between pre- and post-intervention groups, there was no difference in 90-day mortality (20.0% vs. 15.4%; $P = 0.745$) or ICU admissions (25.7% vs. 23.1%, $P = 1$), respectively. The rate of any bacteremic episode was similar between the pre- and post-intervention groups (51.4% vs. 65.4%; $P = 0.307$), but more patients in the post-intervention group developed GNR bacteremia (17.1% vs. 46.2%; $P = 0.023$). In the patients with GNR bacteremia, the number of ciprofloxacin nonsusceptible isolates was higher in the pre-intervention group (100% vs. 30.7%; $P = 0.011$).

Conclusion. Replacing FQ prophylaxis with a conditional order for an anti-pseudomonal β-lactam for inpatients newly diagnosed with AML receiving induction chemotherapy is a feasible option to decrease FQ exposure. Though increased episodes of GNR bacteremia were observed, there was no difference in total bacteremic episodes or clinical outcomes, and the improved ciprofloxacin susceptibility patterns will allow for an additional treatment option in this extremely vulnerable patient population.



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1088. Evaluating the Timing of Antimicrobial Prophylaxis in Allogeneic and Autologous Hematopoietic Stem Cell Transplant

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Background. Hematopoietic stem cell transplant (HSCT) patients develop profound neutropenia during the transplant process and often fever, which is suggestive of infection. Antimicrobial prophylaxis (AP) during anticipated neutropenia is recommended; however, data regarding when to initiate AP is limited. A local quality improvement initiative adjusted AP initiation to target the duration of severe neutropenia, defined as ANC ≤ 500 mm^3 (ANC500), which is when patients are at the greatest risk of infection. This initiative aimed to reduce antimicrobial utilization and consequences of unnecessary antimicrobial exposure while not adversely affecting patient outcomes.

Methods. A retrospective study was conducted across two cohorts over a 2-year period. The pre-intervention cohort (November 2016–2017) called for the initiation of AP on Day -1 prior to transplant. The post-intervention cohort (November 2017–2018) called for initiation of AP when patients reached ANC500. The primary outcome was frequency of febrile occurrences (temperature ≥38°C). Secondary outcomes included days of antimicrobial exposure, positive blood cultures, all-cause mortality, length of stay, graft-vs.-host disease, and *Clostridioides difficile* rates. Patients were excluded if they received a haploidentical transplant or inappropriate AP for the specified cohort.

Results. A total of 248 patients were included in the final analysis with 130 patients in the pre-intervention cohort and 118 patients in the post-intervention cohort. The final analysis included 40 allogeneic and 208 autologous HSCT patients. There was no difference in fever occurrences between the two groups (79% pre vs. 69% post; $P = 0.078$). There was a significant reduction in the mean antibacterial (10.3 vs. 4.95; $P < 0.001$) and antifungal (13.4 vs. 7.6; $P < 0.001$) prophylaxis per patient-days in the pre- and post-intervention group. No significant differences in positive blood cultures (11.5% vs. 16.9%; $P = 0.222$), ICU admissions, length of stay or all-cause mortality were identified.

Conclusion. Delaying antimicrobial prophylaxis (AP) until severe neutropenia showed no difference in fever occurrences or other patient outcomes. This approach is associated with a drastic reduction in antimicrobial exposure.

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1089. Implementation of a Febrile Neutropenia Management Algorithm on Antibiotic Use and Outcomes: An Interrupted Time Series Analysis

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