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Poster Abstracts

Antimicrobial Stewardship, Resistance and Emerging Pathogens

Presentation Number ASR-33

Antimicrobial Stewardship: Analysis of Provider Management of Drug-Bug Mismatch in Multi-Drug Resistant Organisms in a Large Medical Group

Kelli Heisner MSN, RN, CIC, Advocate Aurora Health; Lynn Skelton BSN, RN, CIC

BACKGROUND: The Centers for Disease Control and Prevention (CDC) estimates that 50% of antibiotics used in the outpatient setting are ordered inappropriately. Inappropriate antibiotics can lead to adverse patient outcomes, including clostridium difficile infection and antibiotic-resistant organisms. The purpose of this study is to review inappropriate antibiotic selection, drug-bug mismatch, in a large medical group. **METHODS:** In a large multi-specialty medical group, encompassing 450 sites of care, multi-drug resistant organisms (MDROs) were identified by the microbiology department. Culture results included all MDROs identified from June 1 to August 31, 2018. The infection prevention department, upon receipt of the MDRO surveillance data, reviewed the electronic health record (EHR) for potential drug-bug mismatch. Providers were given 24 hours to address the drug-bug mismatch before infection prevention intervention.

RESULTS: A total of 179 MRDO cases were reviewed. 47 of the cases (26%) had a drug-bug mismatch. In 41 out of the 47 cases (87%), the provider recognized the drug-bug mismatch before the 24 hour timeframe and changed to effective antimicrobial therapy. 6 out of the 47 cases (13%) required infection prevention intervention. Of the 47 drug-bug mismatches identified, 30 (64%) were Methicillin-resistant Staphylococcus aureus (MRSA) in various wound cultures. 17 (36%) were Escherichia coli or Klebsiella pneumoniae Extended Spectrum Beta-Lactamases (ESBL) producing organisms.

CONCLUSIONS: This review identifies that providers in a large medical group most often manage drug-bug mismatches appropriately. This model of infection prevention intervention identifies 6 patients (13%) that benefited from early identification of inappropriate antimicrobial selection.

Presentation Number ASR-34

Implementing Infection Prevention for Leech Therapy

Katia Robinson MPH, Northwestern Memorial Hospital; Michael Postelnick RPH, BCPS, AQ; Nathaniel Rhodes PharmD, MSc; Chao Qj PhD; Michael Malczynski BS; Valerie Widmaier n/a; Saba Rezaeian n/a; Laura Dirnberger n/a; Teresa Zembower MD; Maureen Bolon MD, MS; Christina Silkatis MT (ASCP), CIC, FAPIC

BACKGROUND: Leech therapy is used as a post-operative treatment for plastic and reconstructive surgery. Aeromonas hydrophila, the bacteria present in the leech digestive system, has been associated with infection following therapy. In early 2018, a patient receiving leech therapy at our facility developed a highly resistant A. hydrophila bacteremia. This case prompted an evaluation of the infection prevention measures for leech therapy that were in place at our facility.

METHODS: Pharmacy, Microbiology and Infection Prevention departments evaluated usage of leeches. A process was developed to detect antimicrobial resistance by testing one leech from each lot of 50 upon delivery and then every 30 days. A retrospective chart review of 46 orders was performed from October 2014 to February 2018. To determine antimicrobial resistance, 22 samples from 6 leech lots were cultured and evaluated.

RESULTS: The majority of 46 orders (93.3%), ranging from 10 to 308 leeches per patient, were placed by plastic surgery physicians and ceftriaxone or trimethoprim/sulfamethoxazole were the most common prophylaxis agents given. Of the 22 leech samples, 100% were resistant to ampicillin and ampicillin/sulbactam; 77% to meropenem; 64% to piperacillin/tazobactam; and 18% to ceftazidime. All were susceptible to ciprofloxacin, trimethoprim/sulfamethoxazole and ceftriaxone. A protocol was developed from the process and there have been no further cases of leech associated infections post therapy.

CONCLUSIONS: The collaborative reviewed current practices and developed an infection prevention protocol for leech therapy. This protocol detects resistance and guides antimicrobial prophylactic choices. If critical antimicrobial results are identified, the lot is quarantined from patient use until effective antibiotic therapy is determined. Unless emergent therapy is needed, antibiotic prophylaxis is culture directed based on the susceptibility profiles. Facilities offering leech therapy should evaluate their process and develop protocols to decrease infection risks to patients.

Presentation Number ASR-35

Implementation of an Algorithm Decision Tree Increases Compliance with Clostridium difficile Testing

Paula F. Fritsch MPH, CIC, CPH, MT, Bayfront Health St Petersburg; Jared Sutton MPH, CIC, Accelerate Diagnostics; Mary Beth Moody MT (ASCP), SMS; Clinton Holder MD; Erica Roche MPH, CPH, CPhT, RPT, Bayfront Health St. Petersburg

BACKGROUND: Clostridium difficile infection (CDI) is life-threatening disease that causes diarrhea. Risk factors include hospitalized patients who are receiving antibiotics. Laboratory tests commonly used to diagnose CDI include molecular tests, which is highly sensitive and