**M3 Literature Review**

**Period: 08/08/2024 – 08/09/2024**

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Scientific Highlights:

1. Efficacy of fidaxomicin versus vancomycin in the treatment of Clostridium difficile infection: A systematic meta-analysis.
2. The impact of 30-day antecedent antibiotic exposure on C. difficile ribotype patterns and the relationship with clinical outcomes: A single center study.
3. Comparative effectiveness of vancomycin and metronidazole on event-free survival after initial infection in patients with Clostridioides difficile - a German multicentre cohort study (IBIS).
4. Symbiotic biofilms formed by Clostridioides difficile and bacteroides thetaiotaomicron in the presence of vancomycin.
5. Is advanced age still a risk factor for recurrence of C. difficile infection in the era of new treatments?
6. Microbiome modification for personalized treatment of dysbiotic diseases.
7. Use of frozen native feces for fecal microbiota transplantation in recurrent Clostridioides difficile infection: a simple way to improve the efficiency of donor feces preparation.
8. Microbiome and Metabolome Restoration After Administration of Fecal Microbiota, Live-jslm (REBYOTA®) for Preventing Recurrent Clostridioides difficile Infection.
9. Reduction of Antibiotic-Associated Conditions After Tympanostomy Tube Placement in Children.
10. The end of toxoid vaccine development for preventing Clostridioides difficile infections?
11. From Hemorrhage to Diarrhea: The Comprehensive Clinical Journey of a Patient With Pseudomembranous Colitis.
12. PUNCH CD3-OLS: a phase 3 prospective observational cohort study to evaluate the safety and efficacy of fecal microbiota, live-jslm (REBYOTA) in adults with recurrent Clostridioides difficile infection.
13. CLOVER: A Phase 3 Randomized Trial Investigating the Efficacy and Safety of a Detoxified Toxin A/B Vaccine in Adults 50 Years and Older at Increased Risk of Clostridioides difficile Infection.
14. Targeting the Microbiome to Improve Human Health with the Approach of Personalized Medicine: Latest Aspects and Current Updates.
15. Fecal Microbiota, Live-jslm (RBL; REBYOTA®) for Prevention of Recurrent Clostridioides difficile Infection: What Gastroenterology Nurses Need to Know.
16. Gut microbiome and plasma lipidome analysis reveals a specific impact of Clostridioides difficile infection on intestinal bacterial communities and sterol metabolism.
17. Role of glycogen metabolism in Clostridioides difficile virulence.
18. How to develop a Controlled Human Infection Model for Clostridioides difficile.
19. Correction to: Integrated Safety and Efficacy Analyses of Phase 3 Trials of a Microbiome Therapeutic for Recurrent CDI.
20. Validation of Lyophilized Human Fecal Microbiota for the Treatment of Clostridioides difficile Infection: A Pilot Study with Pharmacoeconomic Analysis of a Middle-Income Country-Promicrobioma Project.
21. Retrospective, Propensity Score Matched Study Examining Relationship between Frailty and Clostridioides difficile Infection in a National Cohort of United States Veterans.
22. Bile acids impact the microbiota, host, and C. difficile dynamics providing insight into mechanisms of efficacy of FMTs and microbiota-focused therapeutics.
23. Human microbiome: Impact of newly approved treatments on C. difficile infection.
24. Diagnosis and management of Clostridioides difficile in inflammatory bowel disease.

Clostridioides difficile/ Clostridium difficile

1. Importance of underlying mechanisms for interpreting relative risk of Clostridioides difficile infection among antibiotic-exposed patients in healthcare facilities.
2. The global burden and trend of Clostridioides difficile and its association with world antibiotic consumption, 1990-2019.
3. Prediction of 28-day all-cause mortality in heart failure patients with Clostridioides difficile infection using machine learning models: evidence from the MIMIC-IV database.
4. Organizational and Infrastructural Risk Factors for Healthcare-associated Clostridioides difficile Infections or Methicillin-resistant Staphylococcus aureus in Hospitals.
5. The Incidence of Clostridioides difficile Infection in the Post-COVID-19 Era in a Hospital in Northern Greece.
6. Emerging Diagnostics in Clostridioides difficile Infection.
7. Clostridioides difficile Infection: Use of Inflammatory Biomarkers and Hemogram-Derived Ratios to Predict Mortality Risk in Hospitalized Patients.

Fidaxomicin & Clostridium difficile

1. Healing from Within: How Gut Microbiota Predicts IBD Treatment Success-A Systematic Review.
2. Prevention and cure of murine C. difficile infection by a Lachnospiraceae strain.
3. Clostridioides difficile and Gut Microbiota: From Colonization to Infection and Treatment.
4. The Role of Fecal Microbiota Transplantation (FMT) in the Management of Metabolic Diseases in Humans: A Narrative Review.

Clostridioides difficile vaccine

1. Vaccines and monoclonal antibodies to prevent healthcare-associated bacterial infections.
2. Development of two recombinant vaccines against Clostridioides difficile infection and immunogenicity in pregnant sows and neonatal piglets.
3. Comorbidities and confusion: addressing COVID-19 vaccine access and information challenges.
4. Differential COVID-19 case ascertainment by age and vaccination status in Victoria, Australia: a serosurveillance and record linkage study.

Vancomycin & CDI

1. Healthcare-associated infections and antimicrobial resistance in Canadian acute care hospitals, 2018-2022.
2. Identification of pathways to high-level vancomycin resistance in Clostridioides difficile that incur high fitness costs in key pathogenicity traits.
3. Australian Group on Antimicrobial Research surveillance outcome programs - bloodstream infections and antimicrobial resistance patterns from patients less than 18 years of age, January 2020 - December 2021.
4. Best Practices in the Management of Clostridioides difficile Infection in Developing Nations.
5. Protective Effects of Huo Xiang Zheng Qi Liquid on Clostridioides difficile Infection on C57BL/6 Mice.
6. A New Convenient Method to Assess Antibiotic Resistance and Antimicrobial Efficacy against Pathogenic Clostridioides difficile Biofilms.
7. Virulence factors, antibiotic susceptibility and sequence type distribution of hospital-associated Clostridioides difficile isolates in Israel, 2020-2022.
8. Potential effectiveness of parenteral nemonoxacin in the treatment of Clostridioides difficile infections: in vitro, ex vivo, and mouse studies.

CDI

FMT/ Fecal Microbiota Transplant

1. Healing from Within: How Gut Microbiota Predicts IBD Treatment Success-A Systematic Review.
2. Prevention and cure of murine C. difficile infection by a Lachnospiraceae strain.
3. Clostridioides difficile and Gut Microbiota: From Colonization to Infection and Treatment.
4. The Role of Fecal Microbiota Transplantation (FMT) in the Management of Metabolic Diseases in Humans: A Narrative Review.

Competitors

1. Animal experiments of a new through-the-scope full-thickness endoscopic suturing device.
2. XOL-1 regulates developmental timing by modulating the H3K9 landscape in C. elegans early embryos.
3. Gut community structure as a risk factor for infection in Klebsiella pneumoniae-colonized patients.
4. Clinical Features and Outcomes of Pediatric and Adult Patients Hospitalized for Coronavirus Disease 2019: A Comparison Across Age Strata.
5. Alterations in one‑carbon metabolism and protein synthesis signals due to methionine supplementation and lipopolysaccharide challenge in Holstein fetal liver explants.
6. Association Between Falls and Social Frailty in Community-Dwelling Older Japanese Adults.
7. Substitutional/positional disorder of biguanide and guanylurea in the structure of a decavanadate complex [(Bg)(HV(10)O(28)(5-))](0.4)[(HGU(+))(V(10)O(28)(6-))](0.6)(H(2)Met(2+))(2)(H(3)O(+))·8H(2)O.
8. Rumen-protected methionine supplementation improves lactation performance and alleviates inflammation during a subclinical mastitis challenge in lactating dairy cows.
9. Reliability of CT Enterography for Describing Fibrostenosing Crohn Disease.
10. Reliability of MR Enterography Features for Describing Fibrostenosing Crohn Disease.
11. Evaluation of Factors Predictive of Efficacy Among Patients With Complicated Urinary Tract Infection and/or Acute Pyelonephritis.
12. Endometrial carcinomas with ambiguous histology often harbor TP53 mutations.

CDAD

1. MicroRNA miR-27a-5p reduces intestinal inflammation induced by Clostridioides difficile flagella by regulating the NF-κB signaling pathway.
2. Graft-versus-host disease in patients with bone marrow transplants: A retrospective study analyzing outcomes and healthcare burden in US hospitals.
3. Unplanned 30-Day Readmissions After Hospitalization for Irritable Bowel Syndrome.
4. Antibiotic use and risk of Clostridioides difficile infection in patients with inflammatory bowel disease.
5. A diagnostic dilemma: cytomegalovirus colitis as an uncommon comorbidity in inflammatory bowel disease: a case report.
6. Impact of diabetic ketoacidosis on outcomes in hospitalized diabetic patients with Clostridioides difficile infection: a national inpatient analysis.
7. A high-temperature-triggered crosslinking reaction to achieve excellent intrinsic flame retardancy of organic phase change composites.
8. Deep learning-based prediction of Clostridioides difficile infection caused by antibiotics using longitudinal electronic health records.
9. Mortality Attributable to Clostridioides difficile Infection: The Rising Burden of Disease in European Countries.
10. Prevalence of Enteric Pathogens and Antibiotic Resistance: Results of a Six-Year Active Surveillance Study on Patients Admitted to a Teaching Hospital.
11. [Clostridioides difficile infection diagnosed by nucleic acid amplification test in a patient with Epstein-Barr Virus-related T-cell lymphoproliferative disorder].
12. Total abdominal colectomy versus diverting loop ileostomy with colonic lavage for fulminant clostridium difficile colitis: an updated systematic review and meta-analysis of outcomes.
13. Trust in government moderates the association between fear of COVID-19 as well as empathic concern and preventive behaviour.

CMC

1. Ultra-broadband diffractive imaging with unknown probe spectrum.

Guidelines

1. Prescribing Trends for Oral Vancomycin and Fidaxomicin after Guideline and Formulary Changes in Ontario, Canada: An Interrupted Time-Series Analysis.
2. ESCMID/EUCIC clinical guidelines on preoperative decolonization and targeted prophylaxis in patients colonized by multidrug-resistant Gram-positive bacteria before surgery.
3. Outbreak investigation of norovirus gastroenteritis in a childcare facility in Central Queensland, Australia: a household level case series analysis.
4. Respiratory diphtheria in the time of Omicron.
5. [Guidelines for diagnosis,treatment and prevention of clostridium difficile infection in China(2024)].
6. [From difficult-to-treat asthma to severe asthma: Step 5].
7. Impact of Helicobacter pylori Eradication on Inflammatory Bowel Disease Onset and Disease Activity: To Eradicate or Not to Eradicate?
8. Preferences for a Clostridioides difficile vaccine among adults in the United States.
9. Reassessing the management of uncomplicated urinary tract infection: A retrospective analysis using machine learning causal inference.
10. Interventional antibiotic treatment replacing antibiotic prophylaxis during allogeneic hematopoietic stem cell transplantation is safe and leads to a reduction of antibiotic administration.
11. Biological Mechanisms of Polyphenols against Clostridium Difficile: A Systematic Review.

Non-toxigenic C. difficile

MGB

Other news of possible interest