

Table 2: Survival Analysis

Factor	Risk Ratio	95% CI	P-Value
+ BSI	5.3	0.5–56.6	0.145
Male	1.0	1.0–5.3	0.976
African American	4.7	1.1–33.0	0.040
No enteral feeds	5.8	1.5–25.3	0.014
Surgery	17.0	2.8–150.4	0.002
Recurrence	2.9	0.2–11.4	0.172

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2328. Community-Onset Invasive Bacterial Infections in Infants Under 3 Months–10 Years of Experience in Auckland, New Zealand

Sarah Primhak, MBBS BSc(hons)¹; Lesley M. Voss, MB, ChB¹; Elizabeth Wilson, MBBS BSc¹; Diana R. Lennon, MB, ChB¹; Rachel Webb, MBChB¹ and Emma Best, BHB, MBChB, DTMH, FRACP (PAEDS), MMED (Research)³; ¹Pediatric Infectious Diseases, Starship Children's Hospital, Auckland, New Zealand, ²Population Child and Youth Health, University of Auckland, Auckland, New Zealand, ³Paediatric Infectious Diseases, University of Auckland, Auckland, New Zealand

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Background. Serious infections remain the leading cause of death in the first year of life. Sepsis in neonatal intensive care units is well described but infants with bacterial infections presenting from the community has not previously been described in New Zealand. Recent studies suggest an increasing incidence of *Staphylococcus aureus* and *Streptococcus pyogenes* in New Zealand pediatric populations. It is, therefore, important to understand the unique pattern of infections seen in the infant population in New Zealand as this may impact on empiric management.

Methods. A retrospective study (2007–2017) including infants aged 8 to 90 days presenting with clinically significant infection and positive culture from a sterile site. Cases were identified from laboratory database and ICD discharge codes, enabling data collection and analysis.

Results. 192 cases were identified from two major hospitals in Auckland. This represented an incidence of invasive bacterial infections of 129/100,000 live births. *Escherichia coli* (40%) and *Streptococcus agalactiae* (22%) were the commonest pathogens. *Streptococcus pyogenes* and *Staphylococcus aureus* caused 14% and 12% of bacteremias respectively. Pacific island infants had the highest rates of infection (255/100,000) as did those from deprived backgrounds.

Conclusion. *Escherichia coli* and *Streptococcus agalactiae* are the commonest causative organisms in community-onset infant sepsis in Auckland.

Rates of invasive bacterial infections in this age group are higher than reported in other industrialized countries (including published data from the USA), with *Staphylococcus aureus* and *Streptococcus pyogenes* being the most disproportionate. Our study demonstrates the increased risk of invasive *Staphylococcus aureus* and *Streptococcus pyogenes* in New Zealand, even at this early age, and this impacts on empiric antibiotic prescribing and management of infant sepsis in New Zealand. The risk of invasive infection is highest in Pacific and Māori infants and those from deprived backgrounds.

A small number of multi-resistant organisms were present in this age group, prior to antibiotic exposure, illustrating that rising rates of community antimicrobial resistance will need to be considered even when prescribing for infants.

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2329. Preliminary Safety and Effectiveness of Whole-Body MRI in Pediatric Patients With Persistent Bacteremia or Febrile Illness

Edwin Hayes, MD¹; Lindsay Miranda, BS²; Anna-Kathryn Burch, MD³; Matthew Marcus, MD⁴; Helmut Albrecht, MD⁵ and Kamla Sanasi-Bhola, MD⁶; ¹Infectious Diseases, University of South Carolina, Columbia, South Carolina, ²University of South Carolina, SOM, Columbia, South Carolina, ³Pediatrics ID, University of South Carolina, Columbia, South Carolina, ⁴Pitts Radiology, Columbia, South Carolina, ⁵Department of Medicine, Division of Infectious Diseases, University of South Carolina School of Medicine, Columbia, South Carolina, ⁶University of South Carolina, School of Medicine, Columbia, South Carolina

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Background. Early recognition of deep seated infections (osteomyelitis and abscesses) in the pediatric population may be difficult, given nonspecific symptoms and signs but remains crucial in the management. There is increasing emphasis on ionizing radiation dose reduction, making whole-body MRI (WBMRI) with short TI inversion recovery (STIR) the advanced imaging modality of choice over bone scintigraphy and CT-scans.

Methods. A retrospective chart review of pediatric patients, <19 years, at Palmetto Health, Columbia, SC who had WBMRI with infectious indications during 9/2011 to 12/2013 was performed. The aims of this research were to describe complications related to sedation/contrast, to determine what portion of patients had

new evidence of deep seated infections and to obtain initial evidence for effectiveness of WBMRI.

Results. 20 patients were included with male predominance (12; 60%). 9/20 patients < 12 months old and 4 between the ages of 12–70 months. The most common comorbidity was sickle cell syndrome ($n = 6$) and 16/20 patients had a recent/current central venous catheter. The reasons for imaging were fever (9, 45%), pain/swelling (5, 25%), and abnormal labs/imaging (6, 30%). 19 patients had other diagnostics studies prior to WBMRI, 17 of whom had ionizing radiation using studies (X-rays / CT scans). 10/19 also had additional trips to the radiology department for focal MRIs. Duration of sedation for WBMRI averaged 88 minutes, with propofol (10/14) being the most common agent used. No complications from the sedation or the MRI contrast were recorded. WBMRI found an average of 1–4 areas of osteomyelitis in 11 patients and up to 8 other locations of deep seated infections in 15 patients. 11/20 had post WBMRI surgical intervention of debridement/drainage. Gram-positive cocci were isolated from 10/17 patients with positive blood/tissue cultures. Of those, 6 were methicillin-resistant *Staphylococcus aureus*.

Conclusion. Utilized as an early imaging modality in pediatric patients with persistent bacteremia/fevers, WBMRI commonly facilitated timely definitive interventions while sparing the patient exposure to ionizing radiation. WBMRI with STIR was safe and is likely to be cost effective.

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2330. Comparison of Clinical Symptoms in Children Who Present With Sore Throat Who Are Later Determined to Be Carriers vs. Acutely Infected

Anne-Marie Rick, MD, MPH¹; Haniah Zaheer, BS² and Judith M. Martin, MD¹; ¹Department of Pediatrics, Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania, ²University of Pittsburgh, Pittsburgh, Pennsylvania

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Background. Among symptomatic children who test positive for Group A Streptococcus (GAS) by throat swab, approximately 20–25% are GAS carriers. Current laboratory methods cannot distinguish acute infection from the carrier state at time of diagnosis.

Methods. We examined findings from two longitudinal studies of children 5 to 15 years of age who had throat cultures performed for the detection of GAS while endorsing at least one symptom consistent with streptococcal pharyngitis. Cohort 1 was a surveillance study in which cultures were performed at regular intervals and with illnesses. Cohort 2 were children who were selectively tested by their care providers and then followed. Symptoms were assessed systematically at the time of the first positive culture. Each participant had at least two follow-up cultures performed between 7–21 days and 22–35 days after the first culture. We defined acute infection as two or more negative follow-up cultures for GAS and carriage as two or more positive follow-up cultures in the absence of symptoms. We compared symptoms at the time of the first positive culture between those with acute infection or carriage using chi-square statistics.

Results. A total of 181 children contributed 228 symptomatic episodes; 52% were female, with a mean age of 8.9 years. In cohort 1: 96/122 (79%) were acute infections vs. 26/122 (21%) were carriers. Children endorsed at least one upper respiratory symptom (other than sore throat) in 40/65 (62%) of those with acute infection and 13/21 (62%) in those who were carriers ($P = 0.976$). In cohort 2: 94/106 (89%) were acutely infected and 12/106 (11%) were carriers. Children had at least one upper respiratory symptom in 24/94 (26%) acute infection and 6/12 (50%) of carriers ($P = 0.076$). In cohort 2, symptoms of nasal congestion alone ($P = 0.009$), vomiting ($P = 0.018$), and abdominal pain ($P = 0.015$) were more common among carriers compared with acutely infected. There was no difference in severity score or duration of symptoms.

Conclusion. This study highlights that when children are selectively tested for GAS based on clinical judgement fewer GAS carriers are identified. For those who were selectively tested, clinical symptoms, including nasal congestion, were more common in children identified as GAS carriers.

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2331. Household Pets and Recovery of *Moraxella catarrhalis* and Other Respiratory Pathogens From Children With Asthma

Meghan Davis, PhD DVM MPH¹; Kathryn Dalton, VMD, MPH¹; Zoe Johnson, BS²; Shanna Ludwig, PhD²; Katie Sabella, DVM²; Michelle Newman, RN³; Susan Balcer Whaley, MPH³; Corinne Keet, MD, PhD⁴; Meredith C. McCormack, MD, MHS⁵; Karen C. Carroll, MD, FIDSA⁶ and Elizabeth C. Matsui, MD, MHS⁴; ¹Department of Environmental Health and Engineering, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, ²Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, ³Johns Hopkins School of Medicine, Baltimore, Maryland, ⁴Department of Pediatrics, Johns Hopkins School of Medicine, Baltimore, Maryland, ⁵Department of Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland, ⁶Department of Pathology, Division of Medical Microbiology, Johns Hopkins University School of Medicine, Baltimore, Maryland

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Background. Upper respiratory tract colonization with a number of bacterial pathogens has been associated with significant respiratory disease and asthma in children. As part of a larger study to evaluate microbial contributions from animals