1165. Seroprevalence of Chagas Disease among Latin American Children Living in New York

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Session: P-68. Pediatric Maternal-child infections

Background. Approximately 300,00 individuals in the United States are estimated to have Chagas disease. To date, only one seroprevalence study in the US has included children. Diagnosis during childhood prevents irreversible sequelae and is better tolerated than during adulthood. Seropositive children may be difficult to identify, as those infected vertically may have never visited an endemic region. We sought to identify children with Chagas disease through a pilot study of serology and risk factors.

Methods. Participants were recruited from Stony Brook University Hospital (SBUH) or an ambulatory pediatric office, both in Suffolk County, New York (population: 1,476,000; 20.2% Hispanic or Latino). Study participants were 1 - 25 years old, resided in Suffolk County, and either the child and/or the child's mother was born in or had long-term residence (≥ 3 years) in Latin America. *T. cruzi* serum IgG was determined with a Chagatest ELISA (Weiner Lab) or a Chagas Detect Plus Rapid Test (InBios). Positive screens were confirmed with a second serologic test at the CDC. Participants completed a survey of demographics and Chagas disease knowledge and risk factors, in English or Spanish. Descriptive statistics were applied. SBUH IRB provided study approval.

Results. We enrolled 93 children (Table 1). Three (3.2%) had a positive IgG screen, of which only one had a confirmed infection (1.1%). This was a 17-year-old who had lived in a rural adobe home and moved to the US at 8 years old. No children or their mothers recalled being bitten by or seeing triatomine insects in their Latin American homes. Of 27 children whose mothers had been screened for infection, 13 were born to 3 mothers with confirmed Chagas disease; all 13 children were seronegative. Of 8 participants reporting other family members with Chagas disease, all were seronegative.

Demographics of 93 participants screened for Chagas disease

	n (%)
Age (years ± SD)	14.5 ± 5.1
Male	48 (52%)
Country of birth among children born in Latin America	73 (78%)
Colombia	10%
Brazil	2 (3%)
Chile	1 (1%)
Ecuador	23 (32%)
El Salvador	10 (14%)
Guatemala	6 (8%)
Honduras	1 (1%)
Mexico	20 (32%)
Paraguay	1 (1%)
Venezuela	1 (1%)
Average age of child at time of immigration to the US (years ± SD)	9.5 ± 4.8
Birth country of mothers whose enrolled children were born in the US	20 (22%)
El Salvador	12 (60%)
Mexico	7 (35%)
Not stated	1 (5%)
Home construction material among children born in Latin America (may select multiple options)	
Brick	40 (55%)
Adobe	22 (30%)
Wood	4 (5%)
Mud	2 (3%)
Cement	1 (1%)
No response	8 (11%)
Setting of child's home in Latin America	
Rural	37 (51%)
Urban	30 (41%)
Suburban	6 (8%)

SD. standard deviation; US: United States

Conclusion. Without reliable tools for identifying those at greatest risk of Chagas disease, universal screening of children born in high-risk Latin American regions remains a reasonable strategy. In addition, screening mothers born in Latin America is likely a more cost-efficient means to evaluate second-generation children. A tremendous knowledge gap of pediatric Chagas disease in the US remains.

Disclosures. **All Authors**: No reported disclosures

1166. Reverse Syphilis Screening and Adherence to The Congenital Syphilis Guidelines: Institutional Experience

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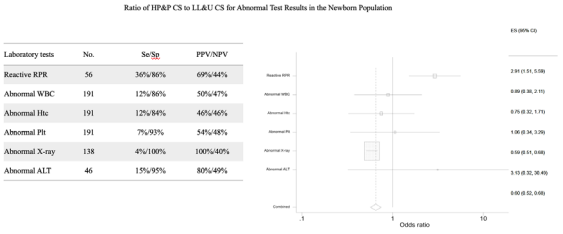
Session: P-68. Pediatric Maternal-child infections

Background. This study is analysis the consequences of the reverse syphilis screening on the management of newborns exposed to maternal syphilis, and pediatric physicians' adherence to the existing guidelines.

Methods. We conducted a 5-year retrospective review of the maternal population and their newborns diagnosed with syphilis. Women with positive results (TT+/NTT+) and discordant (TT+/NTT-/TT+) and their newborns were included in the analysis.

Results. Per American Academy of Pediatrics (AAP), the 202 newborns were divided in two groups: proved or highly probable and possible congenital syphilis (Group A, n=102) and less likely and unlikely congenital syphilis (Group B, n=100). Except for the RPR, none of the other laboratory tests showed higher odds for predicting congenital syphilis. The RPR titers above 1:16 were only identified among newborns belonging to the Group A (5%); 32 patients (31%) in the Group A and 19 (9%) in the Group B had an RPR titer equal to or below 1:8. An RPR titer equal to or above 1:4 was almost three times more likely to be identified in patients from Group A (OR 2.91; CI 1.51- 5.59, p< 0.05). The newborns with non-reactive RPRs represented 64% of the patients in the Group A and 47% of them were born to mother with non-reactive RPR also (mothers with discordant results). Among the Group B, 82% of the neonates had a non-reactive RPR and 54% were delivered to mother with non-reactive RPRs. Babies in Group B had additional work-up performed 69% (n=37) of the time; 15% of these babies were treated with intramuscular penicillin which does not follow established AAP guidelines.

Statistical analysis of the laboratory tests used for the congenital syphilis work-up



Legend: HP&P CS - highly probably and possible CS; LL&U CS - less likely and unlikely CS.
Se/Sp sensitivity/specificity; PPV/NPV positive predictive value/negative predictive value

Result table comparing the two groups of newborns

	NB diagnosis of "highly probable" and "possible" (Group A)	NB diagnosis of "less likely" and "unlikely" (Group B)	*P*-value
Full cohort, n =202 (%)	102 (50.5)	100 (49.5)	
Clinical signs of syphilis	1	0	1.00
Abnormal radiological exams/ total exam done	2/86	1/52	
Newborn RPR, n (%) Reactive 1:64 1:32 1:16 1:8 1:4 1:2 1:1 Nonreactive	 37 (36) 1 2 2 4 12 9 7 65 (64)	 18 (18) 0 0 0 1 3 8 6 82 (82)	 0.005
Abnormal serum WBC/Total tests	12/100	12/88 (67 full-term)	0.88
Abnormal serum hemoglobin or hematocrit /Total tested	12/100	13/88 (67 full-term)	0.72
Abnormal platelets/Total tests	7/100	6/88 (67 full-term)	0.85
Abnormal WBC in the CSF/Total spinal tap performed Abnormal VDRL in the CSF	3/31 1	2 /15 (7 full-term) 0	0.63
Abnormal ALT/Total tests	4 /24	1 /22 (15 full-term)	0.36
Newborn therapy, n = 120 (%) Penicillin IM (1dose) Penicillin IV Penicillin IV+IM	75 (62.5) 24 (32) 49 (65) 2 (3)	45 (37.5) 25 (56) 15 (33) 5 (11)	 0.0032
Maternal RPR, n (%) Reactive Non-reactive	 55 (53) 47 (47)	 46 (46) 54 (54)	0.29
Maternal therapy adequacy (Total treated n= 59) Adequate/ total treated Inadequate or unknown if adequate/ Total treated	 0/28 28 /28	 30 /31 1/31	0.50 <0.0001
Maternal coinfection with HIV, n (%)	14 (14)	13 (13)	0.95
Maternal coinfection with Gonorrhea/ Total tests	3/83	0/88	0.10
Maternal coinfection with Chlamydia trachomatis/ Total tests	9/83	2/88	0.018
Maternal coinfection with Hepatitis C/ Total tests	0/99	4/98	0.059
Maternal coinfection with Hepatitis B/ Total tests	2/101	1/97	1.00
Maternal toxicology screening positive/ Total tests	6/38	5/32	0.82
ID consult provided, n (%)	22 (22)	13 (13)	0.10

Conclusion. The reverse syphilis screening and non-adherence to the guidelines led to additional screening to half of the newborns in both groups. This study highlights the need for a comprehensive maternal history at the time of delivery that is effectively communicated between the providers. This might lead to greater congruence with the established AAP guidelines.

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1167. Hospital Readmissions among Infants Diagnosed with Early-Onset Neonatal Sepsis in Connecticut

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Session: P-68. Pediatric Maternal-child infections

Background. Early-onset neonatal sepsis, defined as sepsis within 72 hours of birth, results in significant infant morbidity and mortality. Readmissions associated with neonatal sepsis have not previously been well-described. Early-onset neonatal sepsis is a mandatory reportable condition in Connecticut, allowing for expanded data collection through public health surveillance to evaluate readmissions.

Methods. Infants with early-onset neonatal sepsis born in Connecticut during 2007–2016 were identified from statewide surveillance data and matched with a statewide hospital discharge database. We describe readmission rates, causes and timing of readmissions, and demographic and clinical factors associated with readmission among this group.

Results. Among 250 infants with early-onset neonatal sepsis matched to discharge data, 208 (82%) infants survived their initial hospitalization at birth. During the first year of life, 49 (23.6%) infants were readmitted. The most frequent reasons for readmissions were pulmonary complications (19%), systemic symptoms (17%), and gastrointestinal illness (13%). Infants with initial hospitalizations lasting longer than 30 days after birth were associated with higher rates of readmission compared to those discharged within 30 days after birth (35% vs. 19%, p=0.02). Higher readmission rates were observed among non-white infants (29% vs. 18%, p=0.06).

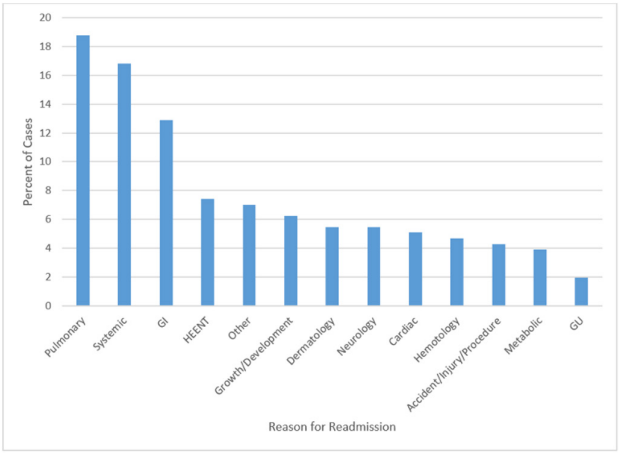
Summary of early-onset neonatal sepsis cases and return hospital visits in Connecticut, 2007-2016

Summary of Cohort	Number of Infants	Percent
Total Reported Neonatal Sepsis Cases	250	
Matched Neonatal Sepsis Cases	250	
Lived	208	83.2%
Died	41	16.4%
Surviving Infants	208	
No ED Visits or Readmissions	89	42.8%
ED Visit Only (≥1)	70	33.7%
Readmission Only (≥1)	14	6.7%
ED Visit and Readmission (≥1)	35	16.8%
Total Infants with Readmissions	49	23.6%
Total Infants Readmitted in 30 days	14	6.7%
Total Infants Readmitted in 90 days	21	10.1%

Demographic and clinical factors for Connecticut neonatal sepsis cases, 2007-2016

	Readmitted (n=49)	Not Readmitted (n=159)	Chi-Square Analysis
Gender			0.54
Male	28 (25%)	83 (75%)	
Female	21 (22%)	76 (78%)	
Race			0.06
White	17 (18%)	80 (82%)	
Non-White	32 (29%)	79 (71%)	
Ethnicity			0.31
Hispanic	19 (30%)	44 (70%)	
Non-Hispanic	13 (19%)	55 (81%)	
Unknown	17 (22%)	60 (78%)	
Gestational Age at Birth			0.12
Pre-Term	26 (28%)	67 (72%)	
Full Term	23 (20%)	92 (80%)	
Infant Birth Weight			0.50
<2500	23 (26%)	67 (74%)	
2500+	25 (22%)	91 (78%)	
Delivery Type			0.58
Vaginal	21 (21%)	79 (79%)	
C-Section	25 (24%)	78 (76%)	
Unknown	3 (60%)	2 (40%)	
Membrane Rupture			0.38
<18 hours	24 (20%)	94 (80%)	
18+ hours	12 (27%)	33 (73%)	
Unknown	13 (29%)	32 (71%)	
Prophylactic Intrapartum Abx			0.72
Received	23 (23%)	77 (77%)	
Not Received	13 (21%)	50 (79%)	
Unknown	13 (29%)	32 (71%)	
Maternal Age (years)			0.10
<30	31 (28%)	81 (72%)	
30+	17 (18%)	78 (82%)	
Initial Infant Hospital Stay (days)			0.02
30 days or less	29 (19%)	122 (81%)	
>30 days	20 (35%)	37 (65%)	

Reason for one-year readmissions of Connecticut neonatal sepsis cases, 2007-2016



The top three reasons for readmission include pulmonary (19%), systemic (17%), and GI problems (13%).

Conclusion. Given the high proportion of infants diagnosed with early-onset neonatal sepsis who are readmitted within the first year of life, further efforts are needed to prevent readmissions among this vulnerable patient population. Non-white infants and infants with prolonged initial hospitalizations after birth might be at higher risk for readmission. These groups warrant intensified strategies to prevent readmission.

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1168. Are the *Staphylococcus aureus* Isolates that Recolonize Infants in a NICU Following Successful Decolonization the Same or Different from the Initial Colonizing Isolate?

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Session: P-68. Pediatric Maternal-child infections

Background. *Staphylococcus aureus* is an important pathogen of infants in a neonatal intensive care unit (NICU). Colonization precedes infection and decolonization may prevent infection. The origin of colonizing organisms may be the NICU environment or personnel or visitors. We have observed infants who became recolonized after successful decolonization. The purpose of this study was to determine the proportion of infants who become recolonized with the same strain or a different strain.

Methods. Eligible infants were consecutive infants who 1. were colonized with methicillin-susceptible *S. aureus* and were successfully decolonized with topical mupirocin ointment (nares and umbilicus) as evidenced by 2 or more consecutive negative weekly surveillance cultures (in the absence of a course of systemic antibiotics with activity against MSSA), 2. subsequently became recolonized, and 3. the pair of isolates was available for analysis. Isolates were analyzed by staphylococcal protein A (*spa*) typing and pairs with concordant *spa* types were subjected to whole genome sequencing (WGS; Illumina MiSeq) and phylogenetic analyses. Pairs of isolates with fewer than 25 single nucleotide polymorphism differences were considered closely related.

Results. There were 19 occurrences of MSSA recolonization in 17 infants following 2-6 (median, 2) negative weekly intervening surveillance cultures. Based upon *spa* typing (that identified 19 *spa* types), in 11 (58%) there was a concordant *spa* type and in 8 (42%) there was a discordant spa type. Of the 11 pairs of isolates with concordant *spa* types that were compared after WGS, 10 were closely related resulting overall in recolonization with a closely related strain in 53% of episodes.

Conclusion. Among MSSA colonized infants who become recolonized after successful decolonization, the recolonizing strain is the same as the original strain in over half of cases. In such cases the source is more likely to be a visitor than the NICU environment or staff. The possibility that some cases classified as recolonization were in fact persistent low level colonization or carriage in another body site not detected by surveillance cultures cannot be excluded.

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