COMMUNITY ONSET CENTRAL LINE ASSOCIATED BLOODSTREAM INFECTIONS (CLABSIS) IN PEDIATRIC ONCOLOGY PATIENTS: AN UNDERESTIMATED PROBLEM?

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BACKGROUND

CLABSIs are associated with significant mortality, morbidity, and increased healthcare costs in oncology patients. The majority of the literature focuses on CLABSIs in the hospital setting but less is known about the epidemiology of CLABSIs in the pediatric oncology ambulatory setting (Community Onset CLABSIs:CO-CLABSIs). Our aim was to describe the burden and nature of CO-CLABSIs in children with cancer.

METHODS

A prospective study was conducted at a large pediatric oncology hospital in Athens, Greece from 12/2015 to 12/2017. All patients admitted to the oncology ward with a central line (CL) and a bloodstream infection (BSI) within the first 48 hours of admission and no focus of infection, were prospectively studied. Patients discharged within 5 days prior to enrollment to the study were excluded. Clinical and demographic data including length of antibiotic therapy, central line removal, ICU admission within 72hours, chemotherapy delay and death within 30 days, were collected. CLABSI surveillance data were also collected for inpatients using CDC definitions

RESULTS

31 CO-CLABSI cases were identified with a median hospital stay of **10** days (IQR:6-11) and a median antibiotic course of **10** days (IQR:10-10). The infection resulted in a

- delay in chemotherapy in 8/29(27.6%)
- catheter removal in 4/31(12.9%)
- ICU admission 1/31 (3.2%)
- No deaths were recorded.

During the same period, **12** CLABSIs occurred in the hospital. Pathogens isolated from CO-CLABSI and CLABSI cases are shown in Table1.

Gram negative organisms were predominant in CO-CLABSIs in contrast to Gram positive organisms for CLABSI

Table 1 Microorganisms identified in COCLABSIs compared to CLABSIs during the period December 2015 to December 2017

	COCLABSIs		CLABSIs	
	n=34*	%	n=12	%
E.coli	7	21%	1	8%
klebsiella spp	7	21%	1	8%
Pseudomonas spp.	3	9%	1	8%
S. aureus	2	6%	1	8%
Coagulase negative staphylococci	7	21%	5	42%
Streptococcus pneumoniae	1	3%	-	-
Enterobacter cloacae	1	3%	1	8%
Other**	6**	17%	2***	17%
Gram positive	13	38%	7	58%
Gram negative	21	62%	5	42%

*3 cases with 2 pathogens, ** Pantoea, Citrobacter, Serratia, Rothia mucilaginosa, micrococcus luteus, Corynebacterium, *** Aeromonas hydrophila, Bacillus cereus

CONCLUSIONS

COCLABSIs were **not uncommon** in pediatric oncology patients in the ambulatory setting and were associated with **significant morbidity** including delays in chemotherapy for the underlying malignancy. **The different pathogen distribution compared to hospital-acquired CLABSIs may provide clues to the pathogenesis and inform future prevention efforts for these infections.**

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