TUNNELED NON-CUFFED CENTRALLY INSERTED CENTRAL CATHETERS (CICC) IN PEDIATRIC ONCOLOGY: INITIAL EXPERIENCE

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Background

A long-term venous access is essential in children when treating malignant diseases. Tunnelling of central lines is a simple tool that allows simultaneously to achieve both ideal puncturing site and catheter exit, reducing risks of many complications. When use in centrally inserted central catheters (CICC) this technique is particularly useful in children. There is no study focused on pediatric oncology patients. This study aims to evaluate our initial experience with CICCs regarding feasibility, catheter life, complications and reason for removal in children with cancer.

Methods

A retrospective analysis of all pediatric oncology patients who underwent tunneling non-cuffed CICC line insertion secured with a subcutaneously anchored securement device, by the pediatric surgery team at our institution from May 2016 to December 2017. Demographic features, primary diagnosis, catheter days, reason for removal and complications were reviewed.

Results

Thirty-three CICCs were inserted into 31 children during the 19-month period. Demographic features and analysis of PICC outcome are shown on Table 1 and 2. When compared to solid tumors, hematological malignancies had a higher median catheter permanence (53 vs. 38 catheter-days), and Lymphomas showed the highest median with 167 catheter-days.

Conclusion

•Tunneled CICC lines are feasible and provides reliable long-term intra-venous access in children with cancer, particularly those with hematological malignancies during induction chemotherapy when the infection rate is higher.

•Better care and proper dressings are important to minimize premature removals and suspected infection. Guidelines of care and education for both parents and nursing team are needed to improve complication rates.

Characteristics	n	%	median catheter-life (days)
Total	31		
Sex			
Male	16	51,6	43
Female	15	48,4	71
Age (year)			
<5	13	41,9	43
5 to <10	12	38,7	79
10 to < 15	6	19,4	39
Body weight (kg)			
<20	13	41,9	38
20 to <30	10	32,3	79
30 to <40	4	12,9	85
40 to <50	4	12,9	39
Diagnosis			
ALL	12	38,7	56
AML	11	35,5	49
Lymphomas	3	9,7	167
Solid tumors	5	16,1	38

Table 1: Demographic and clinical features

Characteristics	n	%	Rate per 1000 catheter-days
Total	33		
Total catheter days	2527		
Range (days)	2-522		
Median (days)	50		
CICC-related complication	12 / 25	48	4,74
Infection	9	36	3,56
Occlusion	3	12	1,18
Thrombosis	0	0	0
Non-catheter related	13 / 25	52	5,14
Accidental dislodgment	2	8	0,79
Elective removal	4	16	1,58
Death	7	28	2,77

Table 2: Analysis of CICC outcome (n=33) and reason for catheter removal (n=25)

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