CLINICAL OUTCOME OF RESPIRATORY VIRAL INFECTIONS IN CHILDREN UNDERGOING HEMATOPOIETIC STEM CELL TRANSPLANT

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BACKGROUND

There are few data regarding the clinical presentation of respiratory viral infections (RVI) in children undergoing hematopoietic stem cell transplant (HSCT), especially in developing countries.

OBJECTIVE

To determine the clinical outcome of RVI in children undergoing HSCT

METHODS

Prospective study in children ≤ 18 years with cancer and HSCT admitted with fever at the Bone Marrow Transplant Unit. Hospital Calvo Mackenna, Santiago, Chile.

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Evaluation at admission:

- Clinical examination
- Laboratory tests
- Blood cultures
- Nasopharyngeal sample for multiplex PCR (20 respiratory pathogens by Filmarray Respiratory Panel ©)

Informed consent and assent

Outcomes

- Respiratory virus detected
- Upper and Lower respiratory tract disease
- Oxygen supplementation
- Admission to the PICU
- Mechanical ventilatory support
- Days of fever
- Days of hospitalization
- Mortality
- Antimicrobial withdrawal

RESULTS (From a total of 45 episodes of fever, 30 episodes (67%) were RVI (+) in 22 children) (Tables shows data from the 30 RVI (+) episodes).

Variable	
Age in years (median)	9,5
Male gender (n;%)	22 (73)
Type of cancer (n;%)	
Leukemia	13 (44)
Non lymphoblastic leukemia	7 (22)
Leukemia relapse	8 (27)
Others	2 (7)
Days after HSTC (median)	145

Table 1. Biodemographic variables.

Respiratory virus	n (%)
Rhinovirus	17 (47)
Coronavirus	7 (20)
Parainfluenza	4 (11)
Respiratory syncytial virus	3 (8)
Adenovirus	3 (8)
Influenza	2 (6)
Single RVI	25 (83)
Multiple RVI	5 (17)

Table 2. Respiratory viruses detected.

Variable	n (%)
Any respiratory symptom	20 (67)
Cough	17 (57)
Rhinorrea	14 (47)
Others	6 (20)
Median Absolute neutrophil count (mm ³)	2407
Median Absolute lymphocyte count (mm ³)	805
Positive blood cultures	1 (3)

Table 3. Clinical and Laboratory findings.

Variable	n (%)
Upper respiratory infection	8 (27)
Lower respiratory infection	20 (67)
Oxygen supplementation	15 (50)
Admission to PICU	4 (13)
Mechanical ventilatory support	1 (3)
Days of fever after admission	median: 2
Days of hospitalization	median: 12
Mortality cases	0
Antimicrobial withdrawal	9 (30)

Table 4. Clinical outcome variables.

CONCLUSIONS

- RVI were frequently detected in fever episodes after HSCT in children (67% of fever episodes were RVI (+)).
- We observed a predominance of lower respiratory infection, oxygen requirement and long hospital-stay.
- Viral persistent-detection was reported in 22% of episodes. In 30% of episodes, antimicrobials were withdrawal after the RVI diagnosis.
- RVI detection might help to rationalize the use of antimicrobials in this population