**VIRAL INFECTION:
MAIN ETIOLOGY OF SEVERE NEUTROPENIA IN PREVIOUSLY HEALTHY CHILDREN AND ADOLESCENT**

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Background and Aims:

Severe neutropenia, defined as absolute neutrophils count (ANC) $<500/\text{mm}^3$, may be found during the investigation of fever in previously healthy patients. Frequently, antimicrobial therapy is introduced for treatment of presumed serious bacterial infection. Few studies have evaluated the final etiology of these cases. We aim to describe the prevalence of severe bacterial infection and etiologies found in cases of severe febrile neutropenia, in previously healthy children and adolescents.

Methods:

Retrospective descriptive study, conducted in a Brazilian community pediatric emergency department, from 2011 to 2015. We included patients between 29 days and 15 years of age, with the complaint of fever. All cases should have blood cultures collected within 72 hours of admission and $\text{ANC} < 500/\text{mm}^3$. We excluded patients with previously known comorbidities and/or receiving antibiotics. We evaluated all etiological investigations.

Results:

Of the total of 13,383 ANC collected; 996 (7.4%) had $\text{ANC} < 1500/\text{mm}^3$; 83 (0.62%) had $\text{ANC} < 500/\text{mm}^3$. Of these, 40 cases met the inclusion criteria. The median age was 10 months; female to male ratio was 1:1. We found viral etiology in 47.5% cases (19) as follows: Parainfluenza type 3 (5), respiratory syncytial virus (4), cytomegalovirus (3), dengue (3), roseola infantum (3), Adenovirus (1). Serious bacterial infection was diagnosed in 4 cases: pneumonia (3); only one blood culture positive for *P.aeruginosa*. Hematological diseases were responsible for 3 cases: leukemia (2), cyclic neutropenia (1). No etiological identification was found in 14 cases.

Figure1. Study profile

Clinical and laboratory data	n=40
Median age (months)	10
Gender	
Boys (n)	20
Girls (n)	20
Hospitalization (n)	30
Admission to intensive care unit	6
Median length of hospitalization (days)	23
Received antibiotics	29
Causes of neutropenia	
Viral etiology	19
Parainfluenza type 3	5
Respiratory syncytial virus	4
Cytomegalovirus	3
Dengue	3
Roseola infantum	3
Adenovirus	1
Hematological diseases	3
Leukemia	2
Cyclic neutropenia	1
Pneumonia	3
Bacteremia (<i>P.aeruginosa</i>)	1
No etiologic identification	14

Table 1. Clinical and laboratory data of 40 patients with severe febrile neutropenia

Conclusions:

Viral infections are the leading etiology of severe febrile neutropenia in patients under 15 years of age; respiratory viruses are the most frequent etiology.