The Spectrum of Diseases in Hospitalized Frequently ill Children

Irine Korinteli, Irma Korinteli

Tbilisi State Medical University, Child and Adolescence Medicine Department, Tbilisi, Georgia

BACKGROUND: Frequent illness in children is a very common problem in preschool and early childhood, and they are often referred to pediatricians. Especially respiratory diseases are the cause of frequent morbidity in children. Children with a history of recurrent or unusual infections present a diagnostic challenge/1/. Detection of etiology is very important for achieving appropriate diagnosis and treatment of these patients/6/.

Frequent childhood morbidity includes eight or more documented respiratory tract infections per year in preschool children and six or more in children over three years of age/4/; Remarkable morbidity with non-specific infectious agents; the presence of rare complications; and permanent laboratory changes /2/.

Recurrent infections in children are a cause for concern/3/. It is estimated that a total of 10–15% of children experience recurrent respiratory tract infections/4/. Recurrent respiratory tract infections are very common in children and a major challenge for pediatricians/5/.

Frequent morbidity in pediatric patients represents a heavy financial burden for public and private insurance systems /7/.

The majority of rehospitalized children are treated with antibiotics in the hospital, which increases the risk of antimicrobial resistance. /8/.

Frequent morbidity in children may be associated with an inborn error of immunity; therefore, timely diagnosis is crucial /6/.

Based on the above, it is appropriate to determine the spectrum of frequently hospitalized patients. The aim of our study was to determine the spectrum of frequent illnesses in hospitalized pediatric patients.

METHODS: The study was retrospective and randomized. The data of pediatric patients hospitalized at Tbilisi State Medical University's G. Zhvania Pediatric Academic Clinic from December 2018 to December 2019 was studied. We randomly selected every third patient from the total number. Among them was separated the data of patients who were hospitalized two or more times during the past year and detected the spectrum of disease and length of stay in hospital. Microsoft Excel software was used for data processing.
RESULTS: From a total of 678 patients, 226 inpatients' medical data were randomly selected (every third). The age of selected patients was 1 month to 5 years; males were 118/52.2% and females were 108/47.7%. Among them, all 47/20.7% patients were re-hospitalized. 30/63.8% were hospitalized two times, and 17/36.1% had more than two hospitalizations. Respiratory infections were most often reason for repeated referrals. 35/15.4% of cases; next place urinary tract infection: 12/5.5% of cases and coexisting conditions 14/6.1%.

Information of re-hospitalized patients, based on diagnoses and coexisting conditions are included in Table N1.

Table N1. Information of re-hospitalized patients, based on diagnoses and coexisting conditions

<table>
<thead>
<tr>
<th>N</th>
<th>Diagnose</th>
<th>Quantity</th>
<th>%/ from 226/</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acute upper respiratory infection</td>
<td>4</td>
<td>1.7%</td>
</tr>
<tr>
<td>2</td>
<td>Acute bronchitis</td>
<td>7</td>
<td>3.0%</td>
</tr>
<tr>
<td>3</td>
<td>Acute bronchiolitis</td>
<td>11</td>
<td>4.8%</td>
</tr>
<tr>
<td>4</td>
<td>Acute tonsillitis</td>
<td>5</td>
<td>2.2%</td>
</tr>
<tr>
<td>5</td>
<td>Pneumonia</td>
<td>8</td>
<td>3.5%</td>
</tr>
<tr>
<td>6</td>
<td>Urinary tract infection</td>
<td>12</td>
<td>5.5%</td>
</tr>
<tr>
<td>7</td>
<td>Coexisting Conditions</td>
<td>14</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

The majority of re-hospitalized patients (29/61.7%) were treated in the intensive care unit. The length of stay in the clinic of the majority of re-hospitalized patients (32/68.0%) was 7-9 days. Co-existing diseases were identified with acute bronchiolitis, pneumonia, and urinary tract infections, in particular:
- Atrial septal defect: 6/54.5% of cases; re-hospitalization with bronchiolitis
- Ventricular septal defect: 3/37.5% of cases; re-hospitalization with pneumonia
- Congenital vesico-uretero-renal reflux (5/41.6%) cases re-hospitalization with urinary tract infection.

DISCUSSION: We studied the spectrum of disease in frequently hospitalized children. According to our data, 1/5 of patients admitted to pediatric clinics during one year were re-hospitalized. Among re-hospitalized patients, two times more hospitalizations are noteworthy. The most frequent reason for repeated hospitalization is respiratory infections. Our data is the same as that of another authors /3,4,5/.

A significant number of re-hospitalized patients are treated in intensive care unit. For repeatedly hospitalized patients, the duration of treatment in the clinic is prolonged.
A high rate of repeat referrals may indicate some gaps in the healthcare system and has a negative impact on the economic development of the country.

**CONCLUSIONS:** A frequency of two or more hospitalizations within one year is noteworthy. Recurrent respiratory tract infections are the most common cause of morbidity. In the case of repeated infections, the length of stay in the hospital is prolonged. The high frequency of repeated referrals indicates the existence of a likely immunodeficiency condition in the children's population. It is recommended to produce more clinical research in this direction, and it is very important to select a group of children who may have primary immunodeficiency.

**KEY WORDS:** Children; Recurrent infections; Spectrum of diseases

**REFERENCES:**
7. Taha Ahmed, Xu Huiping, Ahmed Roaa... Medical and economic burden of delirium on hospitalization outcomes of acute respiratory failure: A retrospective national cohort, Medicine 102(2): p e32652, January 13, 2023
ქვემოთ ქართული ენით გვარიან გირილი სტატიის გათვალისწინება, იგივე ენის ფაქტური წყაროებიდან გამოყენებით.