CLINICAL ASPECTS OF FOODBORN DISEASES IN BIHOR COUNTY

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Abstract
Foodborne diseases can appear as isolated sporadic cases or, less frequently, as an outbreak of illnesses affecting a group of people after a common food exposure. The number of foodborn diseases cases admitted in the Clinic of Infectious Diseases Oradea during the studied year (2010) was 432. The majority of cases were men. The middle aged persons predominated, followed by elder persons. The patients from rural predominated. Between the 432 cases with acute diarrhea, 65 cases (15%) were considered foodborn diseases or food poisonings, 8 cases (2%) were diagnosed with botulism, and 12 cases (3%) were interpreted as traveler’s diarrhea, being tourists in our county. The rest of 347 cases (80%) were interpreted as acute enterocolitis.

The main etiology of foodborn diseases was identified: Salmonella - 15 cases (32%), Staphylococcus -12 cases (24%), and Clostridium botulinum -12 cases (24%). The antibiotics used in the treatment were predominantly beta-lactamines and quinolones.

Key words: botulism, acute enterocolitis, Salmonella, beta-lactamines, quinolones

INTRODUCTION
Foodborne diseases can appear as isolated sporadic cases or, less frequently, as an outbreak of illnesses affecting a group of people after a common food exposure. The diagnosis of foodborne disease should be considered when an acute illness with gastrointestinal or neurologic manifestations affects two or more persons who have shared a meal during the previous week. Important clues to the etiologic agent are provided by both the symptoms and the incubation period.

MATERIAL AND METHODS
We have studied the medical case files of patients hospitalized with the diagnosis of acute enterocolitis or food poisoning in The Clinic of Infectious Diseases Oradea, during the period 1/01/2010 and 31/12/2010.

The main clinical syndromes from the onset of infection have been emphasized. The clinical forms of the disease were classified. The pathological functional parameters for each organ and system were taken into consideration. Complications (from simple affection of an organ, to organ insufficiency) have been noted. Clinical picture has been correlated with the etiology of infections.
The following studies have been carried out:
- Fecal leukocyte determination
- Stool culture for enteric pathogens
- Stool examination for ova and parasites

RESULTS AND DISCUSSIONS

The medical files of the patients revealed the following data. The number of food poisonings and infective enterocolitis cases admitted in the Clinic of Infectious Diseases during the studied year (2010) was 432. The majority of cases were men.
- Men  243 cases  (57%)
- Women 184 cases  (43%)
An increased number of infections in male adults of active age, from the rural environment, are observed. This is justified by their increased and prolonged exposure to the etiologic agent.

There is an increased incidence of infection in Bihor County, where many individual farms exist and sanitary-veterinary prophylactic measures are more difficult, possibly also due to the poor economic level of the region.

The patients from rural predominated:

- Rural 247 cases (67.25%)
- Urban 185 cases (32.75%)

From the 432 cases with acute diarrhea, 65 cases (15%) were considered foodborne diseases or food poisonings, 8 cases (2%) were
diagnosed with botulism, and 12 cases (3%) were interpreted as traveler's diarrhea, being turists in our county. The rest of 347 cases (80%) were interpreted as acute enterocolitis.

The etiology of acute diarrhea was found in 198 cases (46%). Etiology was undetermined in >50% cases, 234 patients (54%). It is possible that a large part of acute enterocolitis has a viral etiology, that could not be put in evidence with the laboratory tests.

In the cases 85 patients with foodborn disease and traveler's diarrhea the etiology was found in 49 (56%) cases, the rest of 38 (44%) cases had an unidentified etiology. The percent of unidentified etiology cases is higher in foodborn diseases than in other enterocolitis because the etiological tests can be performed not only from the stools or the patient's blood, but also from the contaminated food.

There were also difficulties in diagnosing of foodborn diseases, so, the clinical signs were taken in consideration.
The following etiology of foodborne disease was identified:

- *Salmonella* 15 cases 32%
- *Staphylococcus* 12 cases 24%
- *Clostridium botulinum* 12 cases 24%
- *Giardia lamblia* 5 cases 10%
- *Shigella* 3 cases 6%
- *Klebsiella* 2 cases 4%.

Toxins and food poisoning can cause diarrhea. These include staphylococcal toxin (often from milk products due to an infected wound in workers), and *Bacillus cereus*. Some patients of our study were confirmed with staphylococcal foodborne diarrhea.

The clinical forms of onset in foodborne diarrhea were as follows:

<table>
<thead>
<tr>
<th>Symptoms in Onset of Foodborne Diseases</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unspecific infectious syndrome</td>
<td>100%</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>87%</td>
</tr>
<tr>
<td>Vomitings</td>
<td>70%</td>
</tr>
<tr>
<td>Dehydration</td>
<td>53%</td>
</tr>
<tr>
<td>Renal involvement</td>
<td>28%</td>
</tr>
<tr>
<td>Associated pathology</td>
<td>13%</td>
</tr>
<tr>
<td>Cutaneous eruptions or allergies</td>
<td>3%</td>
</tr>
</tbody>
</table>

The first priority in treatment of acute diarrhea was insuring that patients are adequately rehydrated, as significant amounts of fluid may be lost. This fluid loss is the primary mechanism of mortality from acute diarrhea in patients.

Perfusive treatment was used for dehydration, caloric and vitaminic supply, but also for hydroelectric balancing and as a support for antibiotic therapy. Vitamin C, potassium, calcium, glucose solutions (5%, 10%, and 20%), Ringers solution and NaHC03 solutions were used.

The antibiotherapy was started by clinical decisions, in the following period it was administrated by consulting the antibiogram.
Table 2

Antibiotherapy

<table>
<thead>
<tr>
<th>Antibiotics</th>
<th>Cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Betalactamines</td>
<td>29</td>
<td>33%</td>
</tr>
<tr>
<td>Quinolones</td>
<td>21</td>
<td>25%</td>
</tr>
<tr>
<td>Cephalosporines</td>
<td>13</td>
<td>15%</td>
</tr>
<tr>
<td>Cotrimoxazol</td>
<td>9</td>
<td>11%</td>
</tr>
<tr>
<td>Cyclines</td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>Aminoglycosides</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>100%</td>
</tr>
</tbody>
</table>

In the past 20 years, the matter of utility of some or other antibiotics in bacterial diarrhea has been raised. Treatment schemes are highly controversial with respect to tissular penetration of antibiotics, penetration in the inflammed tissues, adverse effects, and prevention of complications.

CONCLUSIONS

1. The number of food poisonings and infective enterocolitis cases admitted in the Clinic of Infectious Diseases during the studied year (2010) was 432. The majority of cases were men - 243 cases (57%), women were 184 cases (43%).

2. The middle aged persons predominated, followed by elder persons: under 16 years - 91 cases (21%), 16-60 years - 240 cases (56%), and over 60 years 101 cases (23%).

3. The patients from rural predominated: rural - 247 cases (67.25%), and urban 185 cases (32.75%).

4. From the 432 cases with acute diarrhea, 65 cases (15%) were considered foodborn diseases or food poisonings, 8 cases (2%) were diagnosed with botulism, and 12 cases (3%) were interpreted as traveler's diarrhea, being turists in our county. The rest of 347 cases (80%) were interpreted as acute enterocolitis.

5. In the cases 85 patients with foodborn disease the etiology was found in 49 (56%) cases, the rest of 38 (44%) cases had an unidentified etiology.
6. The following etiology of foodborne disease was identified: *Salmonella* - 15 cases (32%), *Clostridium botulinum* - 12 cases (24%), *Staphylococcus* - 12 cases (24%), *Giardia lamblia* - 5 cases (10%), *Shigella* - 3 cases (6%), and *Klebsiella* - 2 cases (4%).

7. Digestive tolerance was good to mild, and some medium forms, which allowed PO alimentation - 63 cases (78%). The severe form of disease hindered the alimentation in the first days of evolution to only 22 cases (28%).

8. Perfusive treatment was instituted to 79 patients (93%) for a period ranging from a few days to a week.

9. The most utilized antibiotics are penicillins or other beta-lactamines, the 3rd generation of cephalosporines, quinolones, cotrimoxazol, cyclines, and sometimes aminoglycosides.

REFERENCES


