

Epidemiological Considerations Concerning Food Poisoning Infections

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Abstract

What we eat and drink can become contaminated by bacteria, viruses, parasites, toxins or chemicals that can cause food-borne disease or named usual food poisoning, which is for CDC a common but preventable problem today. That for anyone can get sick from eating contaminated food. During the last 2 years: 2016-2017 it was received data for a complex epidemiological and clinical study, with several interesting interpretations and conclusions in Transylvania region from Romania. There were 109 Food borne diseases, with 2049 sick cases, almost during the summer season. The out breaks appeared in Urban or Rural parts as well in family or collectivity situations. Most of the illness appeared in usual forms-70% or 22 as middle forms and only 5% have needed hospitalization and only 3% from were just emergency cases. In our cases the microbiological etiology was: *Salmonella spp*-67%, mostly *Salmonella enteritidis* in 29%. Also 14% were determined by *Staphylococcus aureus*. To prevent such diseases in population, there are some food safety recommended steps. For a useful prevent and control activity in Food born infection, it has to be put together specialists for: laboratory, epidemiology, and environmental health, as all other with possible enteric disease outbreak and therapy responsibilities.

Introduction

Foodborne illness is a common, costly yet preventable public health problem. CDC estimates that 1 in 6 Americans get sick from contaminated foods or beverages each year, and 3,000 die. It publishes annual summaries of domestic food borne disease outbreaks, based on reports provided by state, local, and territorial health departments [1]. These summaries help public health practitioners better understand the: germs, foods, settings, and contributing factors, involved in these outbreaks. They also can help identify emerging food borne disease threats and can be used to shape and assess outbreak prevention measures. The food we eat and the beverages we drink (including water), can become contaminated by bacteria, viruses, parasites, toxins or chemicals that can cause food-borne disease or food poisoning. The term “food poisoning” applies most readily to the type of illnesses caused by toxins that may be in the food we eat. A case definition includes criteria for: person, place, time, and clinical features [2].

Material and Methods

Anyone can get sick from eating contaminated food. Every year in the United States, 17 percent of Americans get sick, as a result of consuming contaminated foods or beverages. When a food borne disease outbreak is detected, public health and regulatory officials work quickly to collect as much information as possible to find out what is causing it, so they can take action to prevent more people from getting sick.

The pathology of food borne diseases, have interest us in Transylvania, during the last 2 years of time: 2016-2017. The received data were a good reason, for a complex epidemiological and clinical study, with several interesting interpretations and conclusions in Transylvania region.

Results and Discussions

A contamination can happen anywhere along the chain of food production, processing, transportation, handling, and preparation. If contaminated food stays on store shelves, in restaurant kitchens, or in home pantries, more people may get sick. An outbreak is over when the number of new illnesses drops back to what investigators normally expect.

In Transylvania Ro, in the last 2 years, there were 109 Food borne diseases, with 2049 sick cases (ill persons). Most of them appeared in the summer season during May to September- 10-12 % (Figure 1), with an average of 10 % and an increase of 5% cases, in the summer of the year 2017 mostly. Important IA also that most of the cases were reported during the 2 years in August-14% and in July-13%.

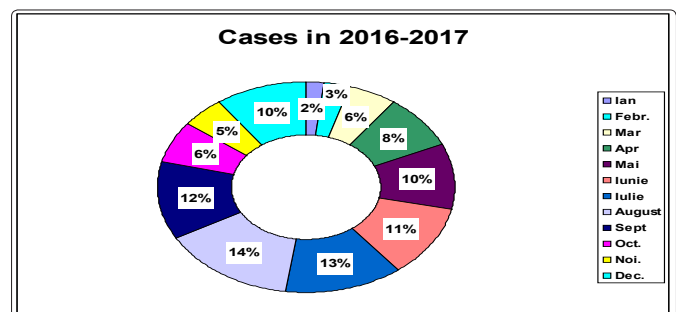


Figure 1: Reported cases

Food contamination occurred at any point, during: production, processing, distribution, or preparation. Some foods were contaminated before they reached in the kitchen, even by the food handlers. If contaminated food stayed on store shelves, in restaurant

kitchens, or in home pantries, more people became sick. That for outbreaks occurred in our cases, in Urban–57% or Rural–43% of cases (Figure 2).

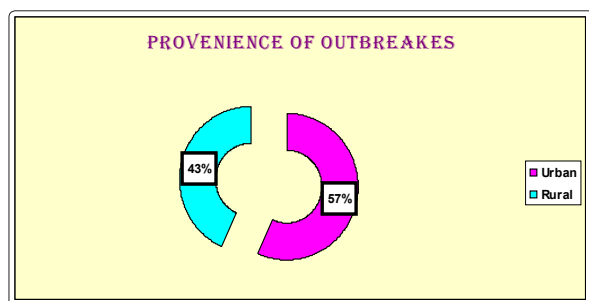


Figure 2: U and R appearance of Food borne diseases

It also happened in family–48%, or in collectivity–52% of the medical reported situations (Figure 3).

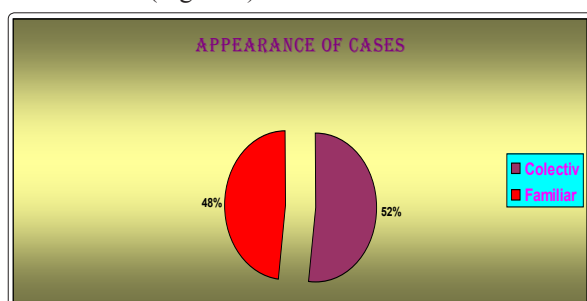


Figure 3: Collectivity or familiar presences of the diseases

Up to the CDC reports food borne infection can appear mostly in: elderly people, children younger than 5 years, people with weakened immune systems as with diabet, HIV, on receiving chemotherapy or radiation therapy, or pregnant women [1].

The situation in our cases was not very different as the usual reported one and so we have detect most of cases in adults with several chronically diseases–56%, followed by elderly people–24% or young children–20% (Figure 4).

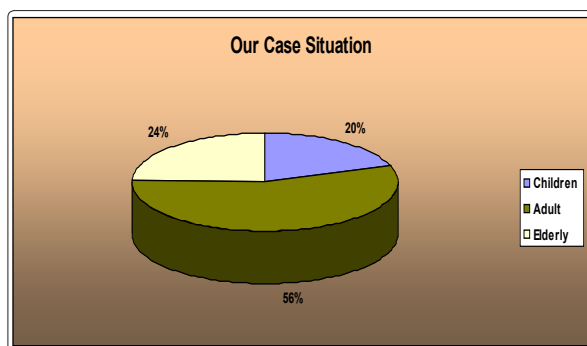


Figure 4: Cases report

After the consume of a contaminated food or drink, it may take hours or days before the develop of symptoms as: nausea, vomiting, stomach cramps, diarrhea and sometimes fever. However, symptoms may differ among the different types of food borne illness, which can take several forms from simple one to severe, who needed almost several days of hospitalization Typically, food-borne disease only

lasts a few days; however, sometimes even more serious illness can occur. Ill persons may need to be hospitalized or may even die from a food-borne disease.

In our cases, most of the illness appeared in usual forms–70% or 22 as middle forms. Only 5% have needed hospitalization and 3% of them were just emergency cases (Figure 5).

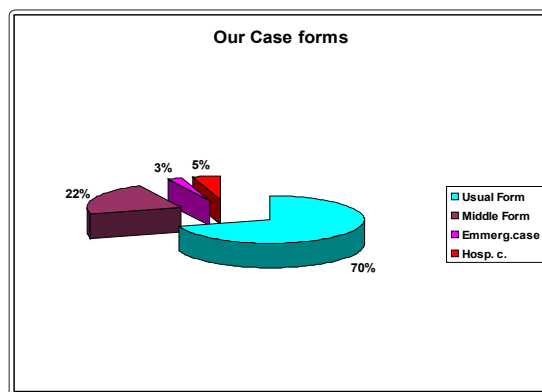


Figure 5: Medical cases report

Many pathogens harmful to humans exist naturally in much of the food we eat, such as meat and poultry. Usually, these pathogens are destroyed when the food is cooked. However, if the food is eaten undercooked or raw, or the food is handled improperly during preparation or storage, the risk for transmitting harmful pathogens to humans increases [3].

Our determinations showed out also several opportunities to make the diseases can happen in the population because of insecure food preparations and less hygiene uses in several kitchens. Most frequent contaminated food products were egg products–25% and meat products–20%. Also in some cases, milk products–18%, or unwashed well fruits–17%, or even seafood dishes–11%, were included to the happened origin of some outbreaks (Figure 6).

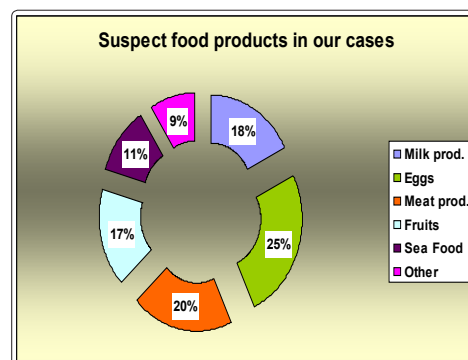


Figure 6: Insecure food for food borne diseases

The top germs almost that cause illnesses from food eaten in the United States are: Norovirus, Salmonella, Clostridium perfringens, Campylobacter, Staphylococcus aureus up to the CDC information. Most their toxins may be in the food we eat. These toxins may be produced by: bacteria growing on food that has not been handled properly; may result from chemicals, heavy metals and other substances in food, or because of fish, shellfish or other animals which have concentrated toxins in their flesh from their feeding habits and environment.

In our cases the microbiological etiology was: Salmonella spp-67%, mostly Salmonella enteritidis in 29%. Also 14% were determined by Staphylococcus aureus and in 19% forms we were unable to put in evidence any microbiology determinations anymore (Figure 7).

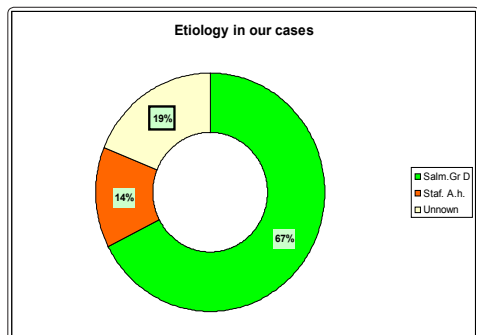


Figure 6: The etiological aspect in food borne infections

To prevent such diseases in population, there are some food safety recommended steps as: clean, separate, cook, and chill to lower your chance of food poisoning and to protect yourself and your loved ones means: wash your hands and surfaces often; don't cross-contaminate. The only way to tell if food is safely cooked is to use a food thermometer. We had to be attentive to never leave perishable food out for more than 2 hours outside. It is also necessary to refrigerate promptly the food prepares for dishes use [4].

Conclusions

- Food-borne illness has a large economic impact across the nation, representing millions of dollars in lost income, lost revenue and healthcare-associated costs.
- To protect people from such disease, there is needed to survive correct each chain of food production, processing, transportation, handling, and all preparation steps.
- Educate the population for good Hygiene uses where ever they are and realize in such ways, a grateful prevention of these digestive diseases.
- For a useful prevent and control activity in Food born infection, it has to be put together specialists for: laboratory, epidemiology, and environmental health, as all other with possible enteric disease outbreak and therapy responsibilities.

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