

## BOTULISM, DIAGNOSE PARTICULARITIES AND TREATMENT OF CASES FROM 1998 AND 2008

Petric Mihaela Carmen

University of Oradea, Faculty of Medicine and Pharmacy, Department of Public Health and Preventive Medicine, [petric\\_mihaela76@yahoo.com](mailto:petric_mihaela76@yahoo.com)

### Abstract

*Botulism represents a paralytic disease that begins by affecting the skull nerves and progresses caudally taking over the limbs. It is a severe acute disease, determined by botulinic neurotoxin which reaches the body either by ingestion along aliments contaminated with Clostridia botulinum, either by reaching infected wounds, and extensive peripheral paralysis have a lethal risk through respiratory stopping but does not affect the central nervous system.*

*Most common symptoms have been: diplopia, dysarthria, dysphagia preceded or followed by: nausea, vomit, abdominal pain. Frequently there have been met: dizziness, foggy view, xerostomia, palpebral ptosis, diminished pupillary reflex and rarely dilated or fixed pupils. Associated to the nervous symptoms, more relevant is the digestive symptomatology: severe constipation, paralytic ileus, urine retention, and typically, in lack of overinfection fever is absent and usually patients are conscious and temporospatially oriented.*

*Identification of the germ in vomit, gastric liquid or feces is very suggestive for diagnose due to the fact that the carrier state is very rare.*

*Botulism is suspected on a afebrile person with intact psychic, with descending and symmetric paralysis and without sensory affection. It must be differentiated from other paralytic infectious diseases: diphtheria, poliomyelitis, encephalitis, but also from neurological and muscular non infectious diseases: AVC, myelitis, cerebral tumour.*

**Keywords:** neurotoxins, diplopia, facial paresis, mydriasis, constipation, afebrility, xerostomy, dysarthria

### INTRODUCTION

The present study proposes to analyse some epidemiological, clinical and treatment aspects of botulism cases hospitalized in the Infectious Diseases Clinic of Oradea between 01.01.1998 and 31.12.2008. In these cases there are under study clinical forms of botulism produced by ingesting preformed toxins or bacteria, initial admissibility of patients depending on the first manifestations of the disease, clinical aspect of the patient at internment, subsequent evolution of disease during internment, applied treatment and necessary time for symptomatology remittance.

Most frequent cases are from rural environment, where botulism infected aliments due to storing conditions and wrong thermic cooking are often consumed, and also aliments in their natural state are consumed (meat, ham, sausages, home made cans) without any thermic cooking.

Most of the patients often report swallowing disorder, seeing disorder with inability of distant or close focusing, diplopia and in the objective examination most of the patients show fixed mydriasis.

## MATERIAL AND METHOD

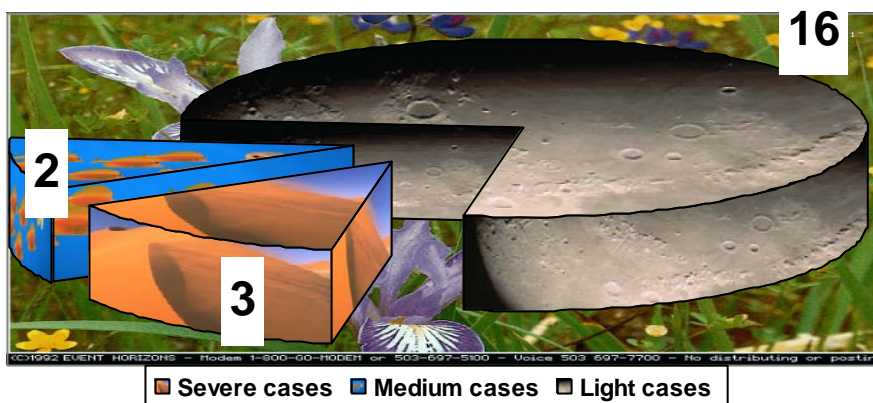
Necessary information about these patients have been collected following anamnestic criteria (age , sex , source environment) , epidemiological criteria (insisting upon consuming of aliments – familiar focus), clinical criteria (it has been observed that symptomatology given by affection of skull nervs III,IV,V,VI,VII, X and XII has been most frequent), paraclinical criteria as well as therapeutical conduct (including the administration of antitoxin serum in all of the cases).

The used data source have been the observation sheets of in-patients ,prescription papers to other branch services ,externment tickets and epicrasis from previous wards where the patients have been interned , results of other investigations done by the patient with the purpose of establishing an ethiology. Centralization of the data has been made using an AMD Duron 1300 personal computer and the Microsoft Office software package. Data has been collected from the following sites: [www.medfam.ro](http://www.medfam.ro) , [www.emedicine.ro](http://www.emedicine.ro) , [www.medline.com](http://www.medline.com). The biochemical methods used have been: an automated analyzer ,bacteriological examinations ,coprobacteriological examination , SNF, cultures.

## RESULTS AND DISCUSSIONS

Studied population is represented by a group of 21 in-patients between 01.01.1998 and 30.12.2008 , except the year 1999 when no botulism cases have been reported in the Infectious Diseases Clinic of Oradea.

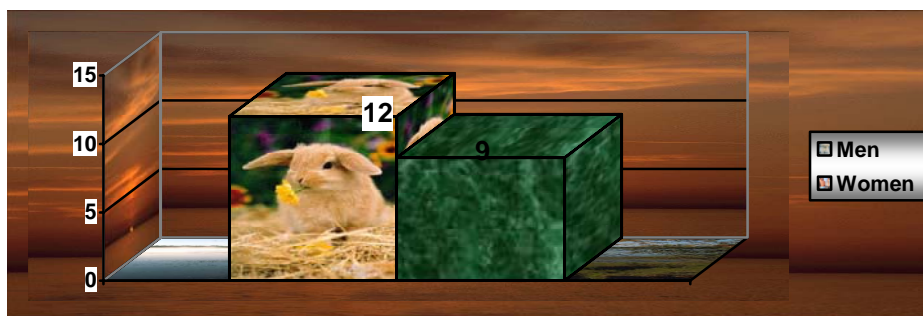
Out of the studied years , most cases have been met untill now in 2008. The majority of the cases have been light or medium , but in 18.04.2001 a grave case has been interned with respiratory failure , transfered to the ICU for artificially sustainance of breathing functions. Another severe case has been reported in 06.12.2003 , suspected as an intoxication with unknown methhemoglobising substance and a IIIrd severe case in 23.02.2004. Distribution of cases is shown in *figure 1*.



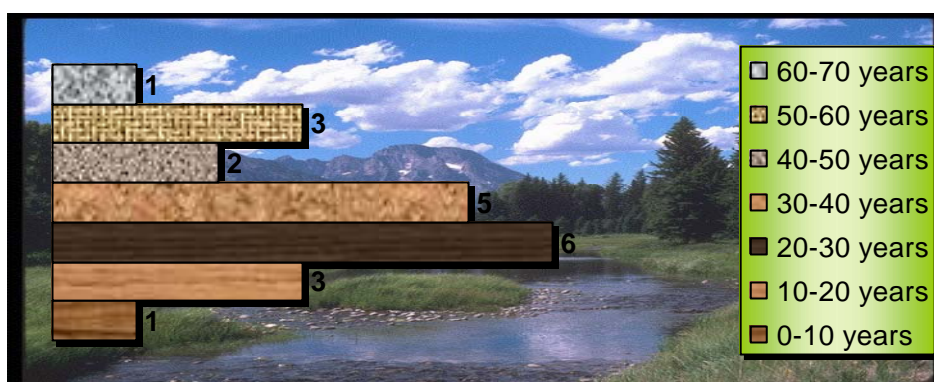
*Figure 1* Distribution of different severity cases

The studied group was formed out of 12 men and 9 women aged between 7 and 70 , with an average of 38 years. Most of the cases have been met on men and most frequent have been between 21 and 40 years.(*Figure 2* )

Distribution according to age groups is as shown below in *figure 3*.



**Figure 2** Distribution between sexes



**Figure 3** Distribution according to age groups

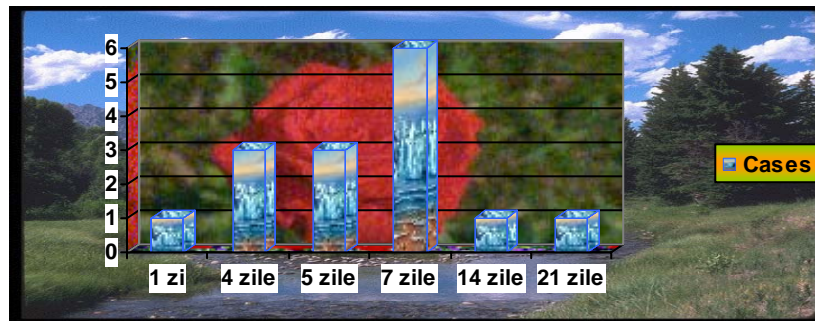
Most of the observed patients come from rural environment; from urban environment: Oradea – 4 cases , rest of the cities – 3 cases. From rural environment: 4 cases with family focus from Dobresti , 4 cases with family focus from Pocioveliste and 2 cases from Oradea. The rest have been met in villages like: Cefa, Surduc , Padurea Neagra , Curtiuiseni , Budoii.

Nonconformant aliments , meaning insufficiently or never cooked , have revealed the following, from what the patients tell: most of them have consumed food with pork meat in 4 cases; others have consumed raw meat kept in salt , sausages , ham , raw sausages and caned fish meat from local stores.

On 3 of the cases the incriminated aliment can be set.

Clinical aspects on internment reveal the following:

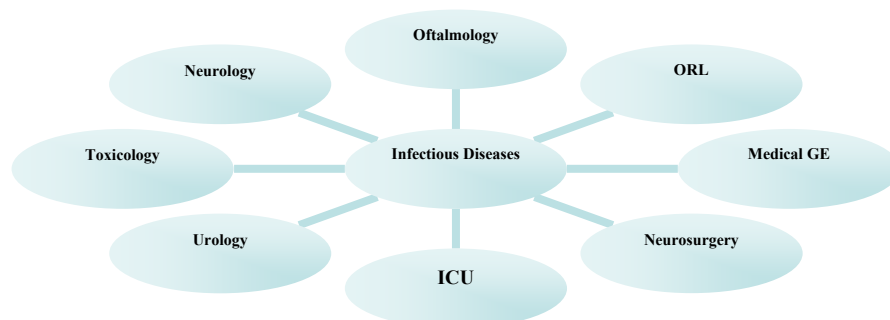
→ Incubation period varies depending on the quantity of the ingested toxin , this being between 1 and 21 days maximum as *figure 4* shows



**Figure 4** Incubation period (days)

- Depending on the debut period when clinical manifestations have been light , or another pathology has been suspected from the start , I have observed the following:
- 2 cases of acute rhinofaringitis , skull nerv paralisis with swallowing disorder interned on the ORL ward
  - Suspicion of intoxication with unknown substance with symetrical peripheric paralisis or AVC suspicion with peripheric motory disorder initially interned on the neurology ward
  - Suspicion of botulinic intoxication interned initially on the neurology ward – 2 cases and interned on the Infectious Diseases ward – 12 cases
  - Suspicion of acute intoxication with methhemoglobizing substance interned on the Toxicology ward – 1 case
  - Suspicion of miastenical syndrome , urinary bladder paresis , skull nerv polinevritis interned initially in the Neurology ward – 3 cases
  - Suspicion of OME (IIIrd nerv) paresis or intoxication with unknown substance which showed on FO examination: retine bilateral edema and fixed bilateral midriasis interned initially on the Oftalmology ward – 2 cases
  - Suspicion of blasser paresis with globe and urine retention interned initially on the Urology ward – 1 case and suspicion of cranial TU along with HIC interned on the Neurosurgery ward – 1 case
  - Suspicion of respiratory failure interned directly on the ICU – 1 case

The following have also been concerned: biliary diskinesia suspicion treated with Scobutil , Anghirol or other possible etiologies in which the epidemiological investigation has not been concludent and the case was misdiagnosed from the beginning(*Figure 5*)



**Figure 5**

Clinical symptomatology present on internment in the Infectious Diseases ward has been most frequently: dry mouth mucosa , swallowing disorder , inability of distant or close focusing , fixed midriasis , palpebral ptosis, nausea , vomit , sensitive abdomen on palpation, constipation and others present in *Table 1*:

*Table.1*

Signs and symptoms	Nr. of cases
Dry mouth mucosa	9
Swallowing disorder , disphagia with odinophagia	21
inability of distant focusing	9
inability of close focusing	13
Fixed midriasis , stiff pupils	20
Disphonia	3
Diplopia, foggy view	8
Uni/bilateral palpebral ptosis	9
Eye pain , fotofobia	1
Urinary incontinence	3
Bladder paresis with urine retention	2
Constipation	16
Meteorism	5
Acute pain	5
Nausea , pain ,epigastralgya	7
Sleepness	5
Farinx hyperemia	5
Straigh irritability of the face	1
Facial paresis	1
Abolite ROT	2
Toracic constriction sensation , dispneea with polipneea (FR>28r/min)	1

Paraclinical examinations have shown the values present in *Table 2*:

*Table.2*

Analisis/vase number			
Glycemia	80-120mg% / 16	>120mg% / 2	Non determined / 3
Amilasis	Normal values / 5	High values / 3	Very high / 1
Leucocyte	1000-5000 / 6	>10000 / 1	-
Euzinofila	3% / 3	13% / 1	-
Fibrinogen	<400 mg% / 3	>400 mg% / 3	-
PCR	Negative / 2	+++ / 2	-
Urine examination	>100000 germ with positive B.Coli / 3	Leucocyte, microflora,hematies/1	
Feces examination	Pozitive for Lamblia / 3	Pozitive for Candida/5	-

## CONCLUSIONS

1. Botulism is more frequent on men , mostly on those who come from rural environment and consume uncooked aliments .
2. Incubation period varies between 1 and 21 days and patients have been transferred after about 3 or 4 days to the Infectious Diseases ward .
3. Clinical evolution is marked by debut symptoms such as: disphagia , dry mucosa , seeing and accomodation disorder , diplopia , fixed midriasis , constipation
4. The initial aspect of the disease pleads for symptoms which determine internment in other wards like: neurology , oftalmology , ORL , urology , ICU .
5. Severe clinical forms have been met in 3 cases along this study out of which 1 showed respiratory failure .
6. Along treatment with antitobulinic serum , supportive therapy targets reshaping of all the functions that hold the organism in good shape .

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