

The Cholera Epidemics in Argentina: Brief Historical Review

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Abstract

Cholera is a food poisoning caused by the ingestion of food and water contaminated by *Vibrio cholerae*. It is one of the oldest diseases of humanity and the first descriptions correspond to Hippocrates. The first documented epidemic occurred in India in 1817 and spread to Turkey and the Arab countries. In our country, the first outbreak occurred in 1856 in the city of Bahía Blanca, associated with the arrival of ships with patients and poor sanitary conditions in the city. The successive outbreaks were accompanied by high mortality, to the point that Dr. José María Penna pointed out that it cost the nation more lives than the war with Paraguay. This article analyzes the successive outbreaks of cholera in our country.

Keywords: Cholera disease; Cholera history; Cholera in Argentina; Penna; *Vibrio cholerae*

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Introduction

Cholera is an intestinal toxo infection caused by the intake of foods that contain *V. cholerae*, a bacterium present in food and waters contaminated by feces that continues to constitute a permanent risk in many countries [1]. It is one of the oldest diseases of humanity and the first descriptions correspond to Hippocrates (400 AC) and to the written Sushruta Samhita (400 to 500 to c). The Cholera Morbus dates from the times of humoral medicine. Its etymology starts from two words: Morbus of Latin which means disease and cholera of Greek which means bile, based on the belief that cholera was a biliary disease. Pedro Pons, argues that, given its high mortality, the word cholera could derive from the Hebraic term Choli - ra which means evil disease [2].

In 1817 the first documented cholera pandemic occurred that began in India and extended to Turkey and the Arab countries in 1826 arrived in Europe through commercial and sea routes. The epidemic affected the entire continent in four waves accompanied by a high lethality rate [3].

During the 1840s and 1850s, John Snow in London was the first to relate the dissemination of cholera with water supplies, and, in 1883, Robert Koch isolated the *V. cholerae* in Calcutta, in the feces of patients with cholera [4].

Since 1900 its occurrence decreased in almost the entire Western world. In 1958 the pandemic affected the Philippines and extended to Asia, Africa, Oceania, and the Middle East.

It reappeared in the Indo-Pakistani War in 1971, in Italy and Portugal in 1973, a case in the Gulf of Texas and eleven cases in

Louisiana during 1973, and finally an outbreak in Peru in 1991 that expanded to Ecuador and the rest of the South American countries [5].

Cholera in Argentina

In an extensive study on cholera in Argentina, Héctor Recalde affirms that the disease arrived from Europe in the second half of the nineteenth century brought by immigrants, and its dissemination was associated with Argentine incorporation into the world market through the movement of people and merchandise that favored its import [6].

The first spring of cholera, which went unnoticed, occurred in 1856 in the city of Bahía Blanca, but the 1858 epidemic showed the poor sanitary conditions of the city. The outbreaks were favored by social factors, living conditions, and work and the characteristics of the different social groups that inhabited the capital and its port, where immigrants and merchandise entered. From the National Department of Hygiene and Public Assistance in the capital, recommendations for the prophylaxis of infectious diseases were released: mandatory denunciation, the isolation of the patient, and the disinfection of their homes and belongings. Conventillos, the deficient lazaretos, bad social conditions, and the little development of healthcare works favored the persistence of infectious diseases.

In 1867, there were more than 5,000 choleric cases in a population that did not reach 180,000 people. The ships were the main route of the transfer of the disease. The 1867 - 1869 outbreak had more enduring effects, with extensive expansion and thousands of deaths. In this regard, Dr. José María Penna said that it cost more lives to the nation than all the casualties of our army in those five years of war with Paraguay [7].



In October 1867, a new epidemic extended from the capital to the provinces of Córdoba, Santa Fe, Corrientes, Entre Ríos, San Juan, Catamarca, San Luis, and Santiago del Estero. The city passed to the province of Buenos Aires affecting the 80 games that constituted it and, in its advance, it reached the Pampa Indians. In Buenos Aires, the second outbreak killed more than 15,000 people, 3000 of them in the city, and was associated with the lack of urban hygiene and current waters.

From these first outbreaks, two epidemiological currents began to take the body. That of the contagionists argued that the disease was acquired by contact with the patient or with their dresses and belongings and, therefore, proposed solutions such as the quarantines of the ships, the lazarettos to isolate the patients, the disinfection and even the burning of their clothes and belongings. And, on the other hand, the anti-contagionists, claimed that atmospheric conditions and winds transmitted from one place to another the miasmas, which under certain local and individual conditions were able to favor the development of the disease [8].

The 1886 epidemic questioned the discovery of choleric vibration by Koch in 1883. The National Hygiene Department denied the value of bacteriological studies, which were supported by Penna in defense of Koch. This epidemic resulted in the establishment of cadaveric cremation, inspired by the interests of public hygiene, awakening ecclesiastical sensitivity [9].

The choleric epidemic also motorized the appearance of new institutions, the Hygiene Council (1869) was founded, the National Health Board was organized, and a Maritime Health Police Regulations for the Argentine Republic was formulated, with which it was pointed to Establish preventive barriers, in order to avoid the entry of diseases or patients who, such as cholera frequently, had a naval origin [10].

Between 1865 and 1869 the war with Paraguay englutted sister nations and with it the pests ravaged the troops and the villages. In April 1867, cholera ravages the army. The Texeira de Freitas steam sailed from Rio de Janeiro at the end of February with the reinforcement for Brazilian troops, sowing in its path the anger that already affected its crew of 200 soldiers. The first case in the city of Rosario occurred on March 15, 1867 [11].

The Illness

Cholera is an exclusive infectious disease of human beings, whose etiological agent is the *Vibrium commum* or *V. cholerae*. The form of disease transmission is closely related to inappropriate access to clean water and sanitation. Peri-urban settlements and refugee fields can be considered risk areas. In most symptomatic cases diarrhea is mild or moderate and is difficult to distinguish clinically from other forms of acute diarrhea. A minority develops acute aqueous diarrhea with severe dehydration [12].

In 2020, 323,369 cases were reported to WHO with 857 deaths from 24 countries. The estimated disease load is 1.3 to 4 million cases per year, with 21,000 - 143,000 deaths worldwide. The difference between the estimated disease load and the observed notifications is explained by a deficiency in the surveillance and monitoring system of this disease [13].

It is an easy treatment disease since most patients can be treated with oral rehydration salts. Adult patients may require up to 6 liters

of oral rehydration salts to treat moderate dehydration that occurs on the first day of the disease. The use of antibiotics is suggested to reduce the duration of diarrhea, reduce the volume of feces, and shorten the quantity and duration of bacterial excretion in fecal matter. The first therapeutic option is doxycycline in monodysis [14].

Final Considerations

The observations of the anesthetist doctor and brilliant English epidemiologist John Snow during the cholera epidemic that affected London between 1848 and 1849, allowed his Intestines to produce a diarrheal syndrome with severe dehydration. The waters of the Thames received the depositions of the sick and then the consumption of water contaminated with morbid matter completed the circle of infection [15]. In Buenos Aires, the most frequent cases occurred in the areas of La Boca or La Riachuelo, where urban infrastructure was defective, and the socio-economic conditions of the population were more deficient in relation to the inhabitants of the neighborhoods located north of the city.

The hygienic and urban improvements in the city of Buenos Aires made between the late nineteenth and early twentieth centuries, determined on the Buenos Aires stage to a decrease in the mortality of the choleric disease.

In relation to the outbreaks of the nineties, it was evidenced that they were the environmental conditions, and the lack of drinking water or sanitation services in the population allowed the propagation of cholera. In this sense, if in the last after the 19th century, the foci were well located in poor neighborhoods, even in the same city of Buenos Aires, at the end of the 20th century the epicenter was North Argentine. Now, if at the beginning the entry of the disease was due to the massive arrival of European immigrants from infected areas and the place par excellence was the shipping ports, one hundred years later it was the border areas of North Argentina identified entrance doors of the disease and tourism.

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