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POLIOMYELITIS

POLIOMYELITIS IN LEBANON

THE FACTS AND THEIR INTERPRETATION

by

Joseph Hatem

Chief, Virological Service,
Central Public Health Laboratory
Ministry of Health, Beirut, Lebanon

During my stay in Europe, in 1957, I was asked to represent Lebanon at the Fourth International Congress on Poliomyelitis (Geneva, July 1957). Using statistical documents sent by the Ministry of Health, I was able to prepare a summary report on the status of poliomyelitis in Lebanon.⁽¹⁾

On my return to Beirut, it appeared to me, as a result of several observations, that the official statistics provided were too low.

It was my eagerness to have a more accurate idea of the situation which prompted me to undertake a comprehensive statistical study on the incidence of this disease in Lebanon. The survey was conducted with the cooperation of Dr. A. Fakhoury* and its results were submitted during the "Journées Médicales" of Beirut, held in April 1959^(2, 3). It is this statistical study which will serve as a basis for the following paper.

There are in fact two methods available for the study of the incidence of poliomyelitis in Lebanon and the susceptibility of the population of this disease. The first method is to carry out a serological survey which should necessarily include the most significant age groups and the various socio-economic strata of the population. The second method, which is a statistical one, consists of carefully noting the date of onset of paralytic poliomyelitis cases, the age of each patient, his geographical origin, and socio-economic environment.

* Assistant Medical Officer, Father Cortbaoui's Physiotherapy Centre.

In Lebanon, no laboratory is in a position to conduct the serological survey referred to above.

The Statistical method is the only one available, but the limitations of this method, owing to the lack of notification of the disease should be borne in mind. Moreover, the statistics only reflect the incidence of the paralytic form and do not take into account the other types of the disease which may be as serious.

I am first giving the results of the statistical surveys carried out on poliomyelitis :

Before 1950, poliomyelitis cases were rare, but suddenly sixty-six cases were reported. Since then, the number of cases has increased, reaching 140 in 1958.

Table I clearly shows that a substantial number of cases are not reported, the actual number of cases being sometimes twice those reported, or even more. In fact, the official statistical figures mainly represent cases admitted to hospital, as the majority of the non-reported cases consist of mild paralytic cases, treated at home, and whose sequelae necessitated the admission of the patients to the Physiotherapy Centre; it was through this Centre that we were able to detect them.

There is still an undetermined number of cases which escape all kinds of investigation, either because the recovery was almost complete, or because the carelessness of the parents left the child without any care.

Table II shows the age group distribution.

This distribution has not markedly changed since 1952. Two thirds of paralysis cases occur in children below the age of two. 95% of cases occur before the age of 5. However, due consideration should be given to some isolated cases in higher age groups, but which never exceed the age of 12. Thus, as far as Lebanon is concerned, poliomyelitis should still be called infantile paralysis.

The mortality rate could be calculated with regard to hospital cases only. It amounted approximately to 10%. A separate study of the cases occurring in foreigners living in Lebanon, showed that the incidence rate of the disease was the same as in the Lebanese population, but in foreigners, the age index was higher, i.e., around the age of 20, and cases were reported as having occurred at the age of 35, 40 and 50.

The monthly distribution of cases (Table III) shows that the disease is present throughout the year with a marked increase during the hot and dry months of summer. This seasonal incidence is intermediate between the two extreme types which may be observed according to each country : the first being the epidemic type (America and Northern Europe), where the disease breaks out in autumn and summer, whilst the second is the endemic one (Egypt and North Africa), in which the disease is present throughout the whole year. As for Lebanon, due to its climate and its socio-economic structure, it offers a particular pattern intermediate between the two others. The sex distribution shows a proportion of 61.5% of boys and 38.5% of girls, that is to say 16 boys to 10 girls.

From the geographical standpoint, poliomyelitis cases are reported from any part of Lebanon. But, ten years ago, the first cases occurred in Southern Lebanon and in Beirut. This fact is significant, because it chronologically coincided with the arrival of 90,000 Palestine refugees from the Southern borders, and with the arrival and installation in Beirut of approximately one thousand American families. To what extent did these two factors influence the outburst of poliomyelitis in 1952 ? Were more virulent strains introduced into the country ? Due to the lack of virological and serological studies, we are unable to answer these questions.

We are not able to undertake the distribution of cases by socio-economic stratification; but according to the authoritative opinion of several pediatricians, it seems that the number of poliomyelitis cases is twice as great in the poorer strata of the population. Moreover, the majority of cases are reported from the poorer areas of Lebanon (Southern Lebanon) and from the Palestine Refugee Camps.

It is interesting to note the particularly high incidence of this disease in doctors' families. A short investigation showed that in this professional group the incidence of the disease is ten times higher than the general rate of incidence.

Discussion

For a general assessment of the status of poliomyelitis in Lebanon, a record of the paralytic cases would not be enough. Due consideration should also be given to the infantile mortality rate and to the place occupied by infantile paralysis among the other infectious diseases. We shall use in the course of our study universally accepted criteria such as a morbidity index per 100,000 inhabitants and an infantile morbidity rate per 1,000 births.

1) Morbidity index of poliomyelitis

Considering that the present population of Lebanon amounts approximately to 1,500,000 inhabitants, the morbidity index for 1958 may be evaluated at 9.5 per 100,000 inhabitants.

However, it seems that such a criterium is not applicable in the particular case of this country. In fact, the Lebanese population as a whole is not susceptible to poliomyelitis : the only persons who are susceptible to this disease are children below 5 years of age, since 95% of polio cases occur in this population group. It is, therefore, more advisable to calculate the morbidity index in respect of the population concerned.

Unfortunately, it is impossible to obtain accurate statistical figures by age groups. However, through the courtesy of the Head of the Statistical Services, Ministry of Interior, we were able to obtain an approximate number of the 0-4 age group, i.e., 230,000.

If this figure is considered as representing the Lebanese population likely to contract poliomyelitis, this means then that the morbidity index for 1958 should be multiplied by 6.5, i.e., 62 per 100,000 inhabitants, and thus, poliomyelitis may be classified as a highly prevalent disease.

2) Infantile mortality rate

Again in this respect, the official statistical figures leave room for some doubt. In fact, the rate of 12 per 1,000 given for 1957 is lower than the rates of the most advanced countries in Europe and America. This is mainly due to failure to notify deaths and also to report children who die before the age of 2 months and whose births and deaths are never recorded. A study made by Z. Shakhachiri* and his collaborators showed that infantile mortality was about 240 per 1,000 and H. Jalloul** feels that even this figure is too low. It is recognized that during the last 10 years, infantile mortality has substantially decreased in Lebanon, but it is regrettable that no accurate data are available in this respect. The efforts of the services concerned now tend to secure not only the notification of infectious diseases, but also the notification of births and deaths.

3) Poliomyelitis and other infectious diseases

In the annual statistical report of the Ministry of Health for 1957⁽⁴⁾, poliomyelitis ranks eleventh. During this period, two epidemics occurred :

*Public Health School - American University of Beirut
**Head of the Statistical Services - Ministry of Health

influenza and smallpox. So, in normal circumstances, poliomyelitis would have ranked ninth with 47 cases only. As a matter of fact, we well know that there occurred 115 cases at least of infantile paralysis (Table 1) which makes a (revised) morbidity index of 49 per 100,000. Among the eight diseases which preceded poliomyelitis, the one which could best be used for comparison purposes was tuberculosis. It is a fact that most of the tuberculosis cases being admitted into specialized Centres are notified ipso facto. Thus 500 "new" tuberculosis cases were reported in 1957. Considering that the whole population is susceptible to this disease, the morbidity index would be 33 per 1,000,000. Therefore, poliomyelitis actually ranks third, coming after the group of typhoid fevers and dysentery.

CONCLUSION

There are two definitely proved facts which are a characteristic feature of the epidemiology of poliomyelitis in Lebanon :

1. Poliomyelitis is still an "infantile" disease
2. It only occurs in isolated cases

This condition resembles that in a great number of countries where polio is still new and where the danger entailed by this disease is underrated.

I personally consider polio in Lebanon as a "present" danger which will grow worse in future if nothing is done to stop it.

My reasons for making such a statement are the following :

1. Although it is true that polio in Lebanon is still "infantile", some cases occurring in 10 year old children begin to be reported.
2. Only isolated cases are observed, and it is not yet possible to talk of "epidemics" in the full sense of the word. However, although isolated, the cases are numerous and their number is increasing.
3. So true is this fact, that among children under the age of five, polio ranks third, after the typhoidic group of fevers and dysentery, and before diphtheria.
4. Infantile mortality is decreasing as a result of health education, hygiene and improvement of the standard of living. As observed in other countries, the decrease in infantile mortality rate corresponds to an increase in polio cases, first in infants and children, then in adolescents and adults.
5. Finally, one should bear in mind that 90% of the cases involve sequelae which require physical rehabilitation and orthopaedic care. In most instances, the cost of such care is to be assumed by the Government, as two-thirds of the cases at least occur in the lower social strata.

For the above reasons, and regardless of any sentimental consideration, we should say that poliomyelitis is a serious problem in Lebanon, although it has not yet reached dramatic proportions. The danger may be controlled by vaccination, which has already stood the test of experience in several countries.

This vaccination may be carried out by stages :

- 1 - First, vaccination of all children from 3 months to 5 years, as well as medical, nursing, hospital and laboratory personnel, and members of their families. All foreigners coming to Lebanon to stay should also be vaccinated.
- 2 - Vaccination of children of the age group 5-10
- 3 - Vaccination of individuals of the age group 10-20

It does not seem necessary to vaccinate people above 20, except as far as the above-mentioned adults are concerned.

Up to the present 27,000 cc of vaccine has been imported and used, which corresponds approximately to 9,000 persons vaccinated, the majority of whom are children. It is desirable that the authorities concerned realize the polio danger in the country and decide to implement an appropriate vaccination programme in accordance with the scheme outlined above.

Acknowledgement

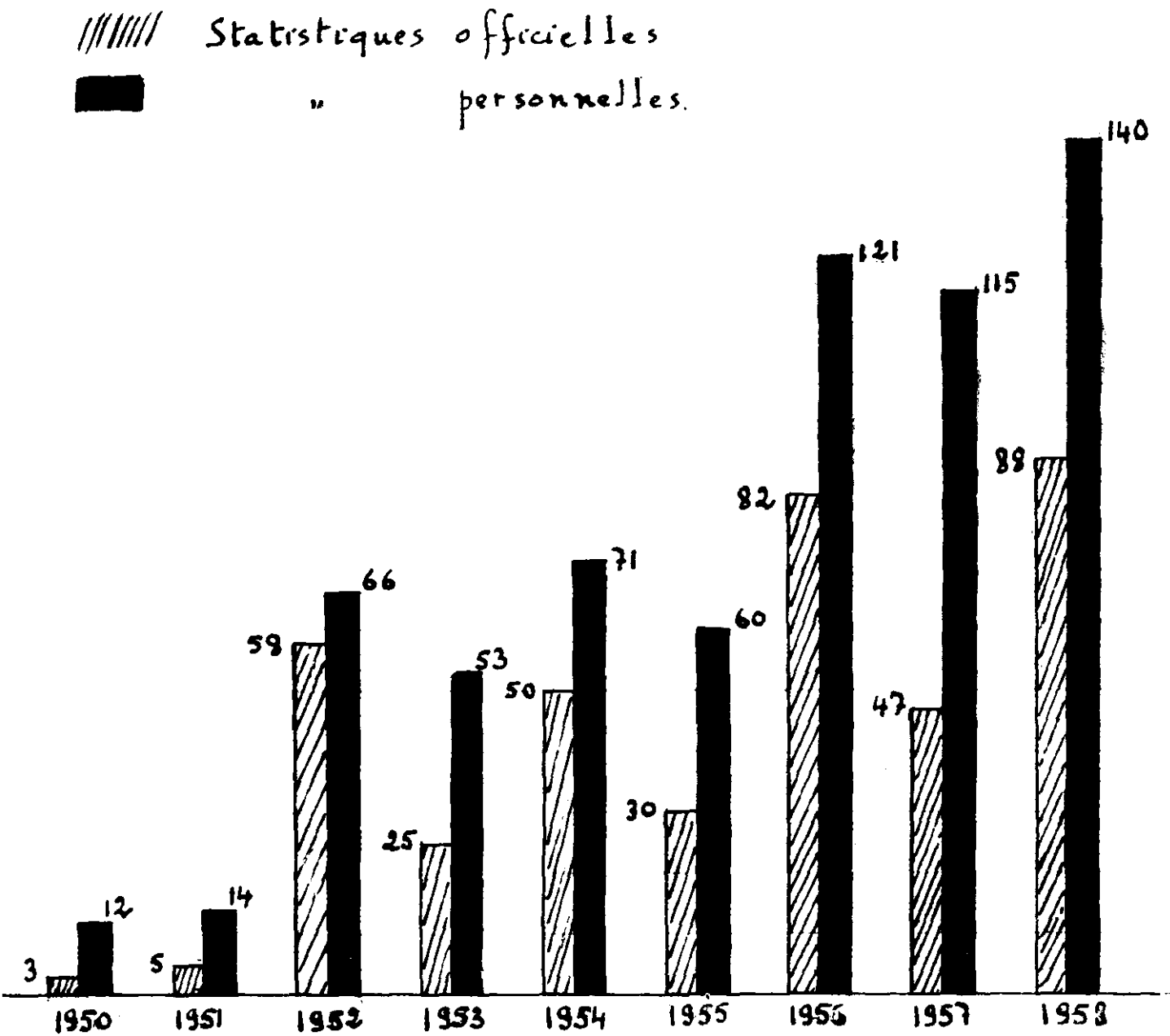
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Poliomyélite au Liban
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