

ANTIRABIC TREATMENT AT THE HAFFKINE INSTITUTE

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Rabies or hydrophobia in man as we all know is an acute disease of the central nervous system to which man and all warm-blooded animals appear to be susceptible. The disease is caused undoubtedly by a minute living organism which has not yet been identified and hence it is referred to as the virus or poison of rabies. The disease does not arise spontaneously. It can only be transmitted by bites of animals suffering from the disease, or by the saliva of the infected animal coming in contact with broken skin or abraded mucous membrane.

The term hydrophobia should be confined to the disease as met with in man only, as the fear of water is not seen in lower animals. In a rabid animal the virus is present in the nervous system, viz., brain, spinal cord and large nerves, also in the salivary glands and in certain of the internal organs such as the pancreas and suprarenal glands. For practical purposes blood and other structures of the body, such as bone and muscle, do not contain the virus in sufficient quantities to carry infection. The virus passes from the brain into the salivary gland and then into the saliva of the infected animal.

Incubation Period

The incubation period of rabies in man and animals is very variable. In dog it is anything from 40 days to 90 days, and in man from 17 days to 6 months. The disease does not make itself evident until the virus has reached the brain and spinal cord and has set up sufficient changes in these structures to cause symptoms. The variability of the incubation period may probably be due to the dose of the virus implanted and the proximity of the bite to the brain. Multiple deep bites on the face and the fingers are followed by a shorter incubation period than are bites on other parts of the body. Again, the incubation period of the disease after bites through clothing is much longer because a considerable part of the virus is taken up by the clothing.

Prophylaxis

(1) The disinfection of the wounds.—The early disinfection of the wounds has undoubtedly played an important part in the reduction of mortality from rabies, provided the disinfection is thorough and is done immediately after the bite. It has become a routine in this Institute to disinfect the wounds before commencing the immunisation treatment. The procedure is to cleanse the wound thoroughly with some disinfectant like Eusol or carbolic lotion 1 in 40 or acriflavine lotion one to two per cent., and then dry the wound with dry cotton. After having done this the wounds should be thoroughly cauterised, especially the edges of the wound with concentrated nitric acid or formalin. Punctured wounds should be opened up with a bistoury or a pair of sharp scissors and then disinfected as above. This procedure should be adopted for all wounds

whether septic or non-septic. No attempt to stitch the wounds should be made even if it has to cause disfigurement.

(2) Pasteurian Treatment—The wound having been efficiently cauterised, the next point for decision is the dosage of vaccine to be given for immunisation. The dose of vaccine should be proportional to the risk, i.e., the severity of the bite. In the Haffkine Institute the following classification and dosage are used :—

			Dose
CLASS I.	Cases which have not been bitten, but have come in contact with the saliva of rabid animals (<i>i.e.</i> licks, etc.)	...	2 cc. daily for 7 days.
CLASS II.	Superficial bites on the body and extremities excluding the finger, head and neck	...	2 cc. daily for 14 days.
CLASS III.	Deep bites of the body and the extremities and superficial bites of the fingers.		
	Adults	...	5 cc. daily for 14 days.
	Children	...	3.5 cc. do.
CLASS IV.	(Extremity). Deep and extensive bites of the body, extremities and fingers.		
	Adults	...	7 cc. daily for 14 days.
	Children	...	5 cc. daily for 14 days.
CLASS V.	(Face). All bites on the head and neck, superficial and deep.		
	Adults	...	10 cc. daily for 14 days.
	Children	...	7 cc. do.

Preparation of the Antirabic Vaccine

In most of the Pasteur Institutes in India at present the vaccine is a 5% suspension of fixed virus brain in 0.5% carbolic saline. The vaccine is bottled in ampoules of various sizes and kept in the cold room and issued for use two weeks after its preparation. Antirabic treatment is available practically all over India. Besides the six principal institutes, viz., Kasauli, Calcutta, Shillong, Patna, Bombay and Coonoor, there are several antirabic out-centres broadcast all over the country where antirabic treatment is available without much inconvenience or delay. Attempts are, however, being made to open out more centres.

Mortality from Rabies

During the year 1930 at this Institute, 736 persons underwent the full course of antirabic treatment, and no person died of hydrophobia after treatment. In 1931, 1,061 persons were treated and only 3 deaths occurred after treatment, giving a mortality of 0.28%. The combined mortality rates of the Institute and its out-centres for the years 1931 and 1932 have been 0.60% and 0.84% respectively. The mortality in treated cases amounts to the very small figure of 0.84%. But it is to be remembered that no vaccine gives absolute protection. There is, therefore, no reason to express surprise if occasionally a death occurs in a treated case. There is evidence to show that if treatment is begun soon after the bite, the chances of infection are reduced to a minimum.

By far the largest proportion of persons who come to antirabic institutes for treatment have been bitten by dogs or jackals. The dog inflicts nearly 90% of the bites and should therefore be regarded as the chief agent in producing mortality from hydrophobia in man. The jackal inflicts perhaps 10% of the bites; while other animals may

be left out of consideration. If rabies amongst dogs were to be practically exterminated, not only a greater number of deaths from hydrophobia in man would be prevented but also a large number of valuable cattle and domestic animals would be saved. Because of the public horror of hydrophobia the Government has established Pasteur Institutes, but the public has not taken adequate steps to keep down the dog population. Unless this is done the work of the Pasteur Institutes cannot be fully effective.

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CURRENT AND EXCHANGE ARTICLES

Toll of Meningitis 32 Deaths in Bombay in a Week.

Forty-eight attacks and thirty-two deaths from cerebro-spinal fever were recorded in the Bombay Presidency during the week ended May 5, as against 47 attacks and 27 deaths in the previous week.

Ahmedabad town reported 20 attacks and 15 deaths during the week against 16 attacks and 10 deaths in the previous week. The rest of Ahmedabad District reported three attacks only, Nadiad one attack, Surat town one attack, East Khandesh four attacks, Poona City six attacks and five deaths, Ahmednagar District five attacks and five deaths, Kurla town two attacks and two deaths, Karachi City one death and Bombay City six attacks and four deaths.

—Statesman, May 5.

A Mobile Hospital

A remarkable hospital on wheels, intended to serve outpost settlement needs between North Bay, Ontario, and the Manitoba boundary, is in operation along the main trans-continental line of the Canadian National Railways. It is a specially equipped car seventy-nine feet long and contains a four-bed ward, operating room, and sleeping quarters for nurses, and is complete in detail for hospital and clinical work. The operating room is ten feet square. The car also contains a bathroom and kitchen. The kitchen is equipped with a cooking range, a refrigerator, and a complete supply of utensils. The car is staffed and operated by the Canadian Red Cross.

From Amer. Jour. of Nursing, April 1934.

T. N. A. I. News

Miss Laura Allyn, of the Canadian Baptist Mission Hospital, Pithapur, Godaveri District, who, with her sister Dr. Jessie Allyn, went to Canada on leave in 1933, is taking six months' post-graduate study in Nursing in Edinburgh, prior to her return to India this fall.

We are still looking for voluntary contributed articles from members of the T.N.A.I. for their *Nursing Journal*.

Welfare Work in Cochin

During the past 4 years, the Cochin Government have been doing much to improve the welfare of the people throughout the rural districts.