

Commentary: N.H. Choksy and serum therapy

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Nasserwanji Hormusji Choksy (1861–1939) was the Chief Medical Officer of the Arthur Road Infectious Diseases Hospital in Bombay, which had been set up exclusively for treating infectious diseases, in 1892, and is still functioning today. He served here, till 1922, his name becoming synonymous with this institution. During the plague epidemic of 1896–97, Choksy worked, in the face of public apathy and suspicion. Most victims were sent there, under compulsion, and Choksy had not only to contend with their ignorance and prejudice, but they were more often brought in when they were beyond all help. The hospital was short staffed and the few, who were induced to join, ran away within hours or days, not even coming back to claim their wages. They had never seen so many people die of plague, for the largest number of people died at the hospital, not only because of numerous admissions but also because many cases were admitted in a moribund condition. There were apprehensions that the authorities took people to hospitals to make a speedy end of them, and the means used to resuscitate and support the strength of patients, through subcutaneous injections, were misconstrued. It was openly stated that the patients were deliberately killed and their hearts taken out to be sent to the Queen in England, to appease her wrath, on account of the disfigurement of her statue, which had occurred at the beginning of the epidemic.

Choksy's experience of treating plague patients with Lustig's serum, during this epidemic, caused him to comment¹ on the critique of a paper by Dr Alfons Mayr, of the Bombay Municipal Laboratory, by a special correspondent of the *Lancet*² (2 June 1900). Choksy clarified that Mayr, who had based his observations on the monthly reports submitted by Choksy

to the municipality, had mixed up his arguments and presented them so confusedly as to prejudice those not conversant with this line of treatment of plague. Choksy pointed out that he had personally conducted all the clinical observations and was solely responsible for the results.

Alessandro Lustig (1857–1937), with his pupil, G. Galeotti, had extracted from *Bacterium pestis*, a substance having the chemical characteristics of nucleoproteins and demonstrated its immunizing properties. These investigations stand in the history of bacteriology and immunology as one of the first attempts at the chemical identification of a bacterial antigen and at using chemically defined antigens to induce active immunity. These substances were used by Lustig and his colleagues as chemical vaccines to immunize animals and obtain immune sera that were employed for serum therapy in plague cases. Lustig, Galeotti and another pupil, G. Polverini were invited to India to apply the results of their research. When they arrived in Bombay, in June 1897, the epidemic had run its course and they treated a few sporadic cases with a serum that had been prepared in the Laboratory of General Pathology, Florence. The results proved satisfactory and they then went upcountry, since no material for further observation was available in Bombay city, where they successfully treated 30 cases. After his return to Florence, when Lustig heard of another outbreak in Bombay, he offered to prepare and send another batch of serum to test its efficacy, on a larger scale. This offer was accepted by the municipality, and Galeotti and Polverini arrived with a sufficient quantity of serum and, as the epidemic was at its height, arrangements were made to start the serum treatment immediately. Observations were conducted over two periods (March–November

1898 and February–May 1899) with moribund cases, who were beyond reach of all human help, and with convalescent and semi-convalescent cases being excluded. It was found that the rate of recovery could be doubled in acute and fit cases with the use of serum therapy. In his letter to the *Lancet*, Choksy contended that there had been no reason for dissatisfaction with Lustig's serum, in the 2 years of its application by him. He held that although the mode of preparation and application at the bedside had to be determined with further research, experiment and clinical observation, serum treatment was the only treatment that could appreciably reduce the high mortality of plague. Choksy maintained that he abided by his experience and called upon critics to withhold their objections and allow those conversant with the subject to continue their work. As for septicaemia cases, Choksy noted, 3 years later, in his work, *Treatment of Plague with Professor Lustig's Serum*,³ that serum therapy did prolong life, but did not always ensure recovery. However, in 1909, in his paper read at the Bombay Medical Congress, entitled, 'The serum therapy of plague in India',⁴ he noted that investigations by the Plague Research Commission had shown that recovery was possible with Lustig's serum.

In recognition of his work during the plague epidemic, Choksy was given the title of *Khan Bahadur* (title signifying bravery) by the British. His experience in treating cases of plague, smallpox and cholera was considered unique, and he was associated with the establishment of the Acworth Municipal Leprosy Hospital, Bombay. Choksy was among the initiators

of a unique collaborative effort to promote public health in Bombay, in the early 1900s, through semi-official organizations, supported by the municipality, doctors and philanthropists.⁵ This resulted in the founding of the Bombay Sanitary Association, in 1903, which aimed at promoting sanitary consciousness through public lectures and the training of personnel. Significantly, the first public lecture at the Bombay Sanitary Association, entitled, 'Some common sense views on plague', was delivered by Choksy. He was also connected with the Bombay Anti-Tuberculosis League, established in 1912, which spread awareness of the disease and provided treatment.

Conflict of interest: None declared.

References

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