GENERAL INFORMATION EPIDEMIC INFLUENZA

SPANISH INFLUENZA, LA GRIPPE

EPIDEMIC INFLUENZA.

Under various names, epidemics corresponding to epidemic influenza have occurred at irregular intervals since accurate descriptions have been made of disease. It is likely that at still earlier times this disease was combined and confused with other epidemic disorders, and so did not stand out as an entity until a relatively modern period.

The history of epidemics of influenza does not differ so much from that of other diseases spread by human intercourse that are usually called contagious. A widespread epidemic follows the introduction of a specially virulent virus, and there follows a general immunity among those of the population who have been infected. As the epidemic dies out the infection decreases in virulence and only sporadic cases occur. From such cases and probably chronic carriers, local outbreaks occur; but the general immunity prevents any general epidemic. After a period of years a new susceptible population has replaced the immune one, and with the introduction of a fresh virulent virus a general epidemic is again brought about. This would account for the great susceptibility of young persons, and as it is twenty-eight years since the last great epidemic, we should not expect many individuals above 30 years of age to be now affected.

CAUSATION.

The causative agent of epidemic influenza has not been certainly recognized. The attachment of the name "influenza bacillus" to a small bacillus described by Pfeiffer in 1892, has been followed by its frequent reception as the actual specific agent. There is, however, much uncertainty as to its etiologic role. It is to be hoped that the study of the present epidemic may lead to some certain knowledge regarding the essential cause of the disease. This should enable us to determine whether the endemic cases and those of limited mild epidemics are really identical with the ones observed in the great periodic outbreaks.

COURSE OF THE DISEASE.

The cases in the present epidemic begin usually quite suddenly with pain in the head, back, eyes, limbs and joints. With the pains there is great prostration, chilliness and a fever of from 101 to 104 F. The pulse does not become very rapid, and the patient often is drowsy, vomiting may occur. Sometimes there may be diarrhoea, but usually there is constipation. After the disease has become established the mucous membranes of the nose and throat become reddened, and there is sneezing and redness of the conjunctiva. Involvement of the larynx causing hoarseness, and of the bronchi, causing cough, are common. There is an associated leukopenia or a normal leukocyte count. A leukocytosis points to some complication. The fever gradually falls to normal after a few days and more or less prostration is present during convalescence. A transient albuminuria is frequent. Many of the cases have hemorrhages of the mucous membranes of the nose, some of the urethra or bowel.

SECONDARY PNEUMONIA.

Not infrequently a lobular pneumonia develops after a few days, and this is responsible for most of the fatalities. The pneumonia differs from the usual picture of pneumonia, in that the temperature may be very slight, and the pulse rate may give little indication of the gravity of the condition. These cases, instead of subsiding, may come down to practically normal temperature for twelve hours, then there may be a sharp rise in temperature, not followed by a chill, backache, bone-ache, headache or nausea.

About this time there may also be expectoration containing bright red blood. As a rule, twelve or twenty-four hours after the second rise in temperature, on physical examination in the lower lung, in a preponderance of cases on the left side, small areas about the size of a silver dollar of typical pneumonic consolidation are found by auscultation. These areas may become marked so that by the second day of the second rise scattered through the lung, usually both lungs, ten or fifteen of these small areas may have appeared. If the patient did well these would gradually disappear. They did not resolve as a pneumonia would resolve. The clearing up of the lung after the [illegible] pneumonia patients was remarkable as to its rapidity. Other cases went on to a typical lobar, massive consolidation, so far as the physical signs were concerned, with dullness, increase in fremitus, typical tubular voice and breathing and all the signs, except that there was not a very marked increase in the pulse rate, and the respirations were not up to this time markedly increased. Cases with almost complete consolidation of the lung, as to the lower lobe, with a temperature of 105, would have a pulse around 100, with respirations 24 to 26. There may be rapidly developing toxemia and vasomotor depression, with death or the patient recovering in many cases.

INCUBATION PERIOD.

[illegible] the incubation period in the cases as probably very short, but it is difficult to obtain accurate histories on this point. The disease is generally spread entirely by contact infection, the virus of the disease being disseminated for short distances through droplets driven into the air in coughing and sneezing. Circumstances which favor the means of spread, such as crowding in cars, favor the spread of the disease.

TREATMENT.

The treatment of the disease is simply symptomatic. Acetylsalicylic acid may be given in 4 grain [illegible] grains every three hours, as advised by Hewlett, or a smaller dose combined with 0.1 gram (2 grains) of acetphenetidin, until [illegible] is secured. Warm baths may give relief, although in numerous cases hydrotherapeutic methods tried and were discarded. The mouth should be kept clean, and elimination stimulated by the free ingestion of water and hot drinks. The patient should be kept in bed in a well-ventilated room until fever has disappeared. Chilling should be avoided. These latter precautions will do much in avoiding the occurrence of complications.

When pneumonia develops, as is shown by moist rales in the base of the lungs, with or without dullness on percussion, the patient demands particular care. Every effort must be made to provide for an adequate intake of fluids, and for nourishment, which must be given in fluid form to a large extent. Warm packs are often useful, combined with the application of coal to the head. With any indication of failing heart, stimulants are indicated.

In the cases of secondary pneumonia, many of which result fatally, the chief conditions to be combatted are the severe toxemia and the vasomotor depression. The toxemia may be combatted by the usual methods, getting fluids into the body by mouth or proctoclysis, or even by hypodermoclysis. Small doses of epinephrin may be given at the same time. The removal of the toxemia may be aided by securing elimination, giving large doses of salts, such as magnesium citrate, or by the giving of calomel. In severe cases, venesection may prove extremely valuable. If a marked cyanosis occurs, as is frequently the case, this may be combatted by the use of oxygen by inhalation, perhaps according to the method devised by Meltzer, or even as has been suggested by Dr. F. Tice, by injection of oxygen under the skin. The prostration is to be combatted by the use of the usual stimulants, such as caffein and sodium benzoate, digitalis, strophanthus or camphorated oil, usually hypodermically. The final stages in this pneumonia are frequently a massive exudation into the lungs and bronchi. Efforts have been made to combat this by the use of morphin and large doses of atropin, in some cases as much as 0.0025 gm. or 1-25 grain, being used.

Specific measures are not available in the treatment of influenza. With certain identification of the causal agent, we may hope for some special protective measures, and perhaps for some specific therapeutic serum.

In the absence of a specific virus to be used in immunizing animals, there remains but one source of therapeutic serum at the present time. This is in the blood of persons recently recovered from the disease. It is quite probable that the blood of convalescent patients contains antibodies for the specific agent of the disease. It would be desirable to inject citrated convalescent blood into the muscles of patients with penumonia at least. Naturally, such blood should be known to give a negative Wassermann reaction. In view of the strikingly beneficial results from convalescent serum in scarlet fever secured by a number of observers, it seems reasonable to try this in influenzal pneumonia, especially as it is devoid of any harmful effects.

PROPHYLAXIS.

The measures to be taken to prevent the spread of the disease comprise all those which interfere with the transfer of the infectious materials from the sick to the unaffected. This includes isolation of the patient and the intelligent use of proper gauze masks by the attendant. In the time of an epidemic, prompt and efficient isolation of the first cases in a community could accomplish much. If this has been neglected and the infection has spread among the population, measures which prevent the coming together of numbers of persons in close quarters are to be employed. The desirability of closing schools in a large city in the presence of an epidemic is a measure of doubtful value. In smaller places this is more reasonable, and the danger of infection when children are outdoors should be less than when they are brought together in a schoolroom.