Araştırma Makalesi – Original Article

Fight against Typhus in Turkey (1945-1950)*

Türkiye'de Tifüsle Mücadele (1945-1950)

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ABSTRACT

Objective: The aim of this study is to examine the struggle against typhus, which has been a scourge of humanity for centuries, in Turkey between 1945 and 1950.

Method: The data of our study were obtained from archival documents, periodicals of the period and other studies in the literature. In addition, this study is a qualitative study and document analysis method was used.

Findings: The fight against typhus, which became epidemic in Turkey during World War II, became one of the most important issues of the post-war period. In the fight against typhus, vaccination had begun in 1943, during the war years. This practice would be accelerated as of 1945. The vaccine produced in large quantities in a short period of time at the Refik Saydam Institute of Public Health played a significant role in this situation. In addition, the effective use of dichlorodiphenyltrichloroethane (D.D.T.) from 1945 onwards constituted one of the most important factors in achieving success.

Conclusion: Thanks to the preventive health measures taken between 1945 and 1950, as well as the strict vaccination program and D.D.T. application, Turkey was able to reduce typhus disease, one of the most feared disasters of those years, from the country's agenda.

Keywords: Turkey, Infectious diseases, Typhus, Spotted fever.

ÖZET

Amaç: Bu çalışmanın amacı yüz yıllar boyunca insanlığın felaketi olan bulaşıcı tifüs hastalığına karşı 1945-1950 yılları arasında Türkiye'de verilen mücadeleyi incelemektir.

Yöntem: Çalışmamızın verileri arşiv belgeleri, dönemin süreli yayınları ve literatürdeki diğer çalışmalardan elde edilmiştir. Ayrıca bu çalışma nitel bir çalışma olup doküman analizi yöntemi kullanılmıştır.

Bulgular: Türkiye'de II. Dünya Savaşı yıllarında salgın haline gelen tifüs hastalığıyla mücadele savaş sonrasının en önemli meselelerinden biri olmuştur. Tifüs mücadelesinde savaş yıllarında, 1943'te aşı uygulaması başlamıştı. Bu uygulamaya 1945 yılından itibaren hız verilecektir. Bu durum üzerinde Refik Saydam Hıfzıssıhha Enstitüsünde kısa sürede çok büyük miktarda üretilen aşının payı oldukça fazladır. Bununla birlikte yine 1945 yılından itibaren diklorodifeniltrikloroetain (D.D.T.) mücadelede etkin olarak kullanılması başarıya ulaşmada en önemli unsurlardan birini oluşturmuştur.

Sonuç: Türkiye, 1945-1950 yılları arasında aldığı koruyucu sağlık tedbirlerin yanında uyguladığı sıkı aşı programı ve D.D.T. uygulaması sayesinde o yılların korkulan en büyük felaketlerinden biri olan tifüs hastalığını ülke gündeminden düşürmesini bilmiştir.

Anahtar Kelimeler: Türkiye, Bulaşıcı hastalıklar, Tifüs, Lekeli humma.

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Introduction

Typhus is also known as spotted fever. Typhus is an infectious disease that has killed large masses of people since centuries BC. The disease, which is transmitted through lice, manifests itself with headache and fever and then causes skin rashes. The disease is also called spotted fever because of its first red and then bluish symptoms on the body. Typhus, which lasts up to two weeks, is a rickettsial disease with dangerous consequences, especially in the elderly. Since the disease especially affects the heart, deaths occur for this reason. People infected with the disease suffer from heart disease from the 10th day onwards, which leads to death. The disease is more common in crowded dirty environments where hygiene conditions are not observed and especially in extraordinary situations such as wars and migrations. It is thought that around 200,000-300,000 people died in 1915 from this disease, which swept across Anatolia during the First World War. Thanks to the strict measures taken during the Armistice period and from the early years of the Republic until World War II, the disease did not become an epidemic, although it always kept itself on the agenda.[1,2]

Typhus cases increased again during World War II due to the economic and social effects of the war. Typhus, which had been seen in sporadic cases until the last months of 1942, suddenly increased and became an epidemic in 1943. The number of people who were infected with the disease in this year was 4,142, while the number of people who died was 298. In 1944, the number of cases was 3,251 and the number of deaths was 311, but some of these cases belonged to the last month of 1943 and the notifications were received in January 1944.[3] In 1940, 1941 and 1942, there were an average of 764 cases of typhus each year, while the number of cases increased so much from 1943 onwards, which should be sufficient to show the seriousness of the issue.[4]

Materials and Methodology

The data of our study was obtained from archival documents, periodicals of the period and other studies in the literature. In addition, this study is a qualitative study and is based on document analysis.

1. 1945 Typhus Fight

By 1945, until May 15, the number of cases was recorded as 1,695 and the number of deaths was 101 throughout the country. These numbers showed that the epidemic was still at a serious level. Istanbul ranked first among the places in the country where the typhus epidemic was most intense. 1944 was less dangerous than 1943, thanks to the central and local measures taken in Istanbul, which was largely involved in the 1943 epidemic. As the number of cases decreased, the central administration decided to abolish its organizations there in October 1944 and decided to continue the fight with only local means. However, two physicians and three health officers of the Ministry's mobile infectious diseases organization were left here until April 1945, and when the disease was finally reduced to isolated cases, this team was also removed and sent to reinforce the teams in İçel and Gümüşhane.[5]

After giving brief information about the current situation, it should be noted here that the High Health Council had an important place in the fight against epidemics in the country during these years. The Supreme Council of Health was established by Law No. 1593 dated April 30, 1930. Its duty was to express its opinions on health and social issues to be given by the Ministry of Health and to examine the legislation on the aforementioned issues. This council, chaired by the Minister of Health and consisting of 9 members, convened every year in February, May and November (Articles 13-17).[6]

In 1945, the Council convened between May 16-18 to discuss the situation and control of infectious diseases in the country, with typhus being the most prevalent disease on the agenda. According to the data

obtained from the meeting of the Council, typhus, which had become especially important during the war years, had still not returned to its normal state before 1942 in May 1945, despite all the efforts of the Ministry after the 1943 epidemic, but the cases detected remained as scattered and isolated cases rather than an epidemic. However, the dispersed state of the disease pointed to a more serious danger in the struggle carried out by both the local health organization and the teams sent from the center. Because the possibility that the places where the disease broke out could merge at any time could lead to a widespread epidemic. For this reason, the Ministry took measures accordingly.

The mass cases encountered among the daily reports of the disease were due to the late notification of the outbreak points of the disease. Although there were no problems in reporting the outbreak of the disease in cities and towns, this did not yield the desired results in villages. In the case of typhus, it was very important for the success of the struggle to be notified in the first days of the disease, but the mukhtars and elders' committees who did not perform their duties well caused undesirable consequences. Although legal action was taken against village councils of elders who reported such cases late or not at all, no immediate and definite result was obtained.

In the fight against typhus, the country had the opportunity to benefit from vaccination to a greater extent than in 1944. Because the stock of typhus vaccine was sufficient to meet all kinds of needs in 1945. In the previous typhus season, only a certain group of people, especially those who were most likely to be infected with typhus due to their duties, had been vaccinated with the available vaccine. In 1945, the masses vaccinated were expanded to include communities of laborers, and vaccination was carried out wherever typhus cases were seen, regardless of the number of cases. All conditions for the allocation of vaccine to the military were abolished and the Refik Saydam Central Hygiene Institute was ordered to provide enough vaccine to vaccinate the entire army. In August 1945, it was decided to start vaccination for the winter season that would begin in the last months of 1945. The Ministry had sent a circular to the relevant institutions. According to the decision taken by the Ministry, the people to be vaccinated were as follows:

1. All civil servants and employees working in public and private organizations,

2. Teachers, civil servants and students over the age of 12 who are in school,

3. Gendarmerie officers and soldiers and members of the police force and their families,

4. Officers and staff working in prisons and convicts and detainees,

5. All laborers working in workplaces and industrial institutions,

6. Tradesmen and apprentices who are in close contact with the public in cities and towns,

7. Neighborhoods and villages with typhus outbreaks in previous years, and the people of their neighboring neighborhoods and villages,

8. All people over 12 years of age in cities and towns who are willing to be vaccinated.

The Ministry of Health also wrote two letters to the Ministries of National Defense and Transportation, requesting that officers, soldiers, civil servants, laborers, and all other members of the military and their family members receive the necessary vaccines from the Institute of Public Health, that they be vaccinated on time, and that they support the Ministry of Health in its fight against typhus. Furthermore, the Ministry had given the good news that D.D.T. would be fought against typhus in the coming typhus season. Especially the D.D.T. to be produced by chemist Nami Serdaroğlu was eagerly awaited by the Ministry. The benefits of D.D.T. in backward villages where lice infestation was high would be enormous in the face of the

difficulties and time lost in transporting and using the means used to disinfect the clothes of infected people. For D.D.T., the Red Crescent would also import a batch of 5,000 pounds from abroad. In addition, with all these measures taken, a special place would be allocated to propaganda in the typhus fight that would begin in August.[7] Indeed, the typhus vaccine to be carried out in August and who would be vaccinated were announced to the public through the press and administrators and the public were asked to provide the necessary assistance to the teams.[8,9]

As can be understood from the information given above, the Ministry was keeping a tight grip on the work. In the 1943 outbreak, the Ministry made extensive use of the spotted fever vaccine prepared by the Institute of Public Health, and the Ministry also carried out intensive vaccination in the winter of 1945. The Ministry had enough vaccine stocks to vaccinate 7-8 million people. The spotted fever vaccine was provided to citizens completely free of charge. In 1945, the Ministry added a D.D.T. clause to the means and methods of sanitation.[10]

In 1945, the Institute of Public Health produced enough spotted fever vaccine for eight million people in one year.[11] The diligent work of the Turkish health workers at the Institute and their own inventions were also instrumental in this success. Due to the difficulties caused by the war years, there were not enough centrifuge machines to produce the vaccine, so Ali Menteşeoğlu, a Turkish doctor, thought of a traditional Turkish churning device instead of a centrifuge for the vaccine produced with eggs. Menteşeoğlu described this production as follows: "When we were helpless, we did something alaturka. We likened the separation of the centrifuge from the oil to the separation of buttermilk from oil. We thought of the Turkish churn. I made an air churn. I put thousands of typhus eggs in it, something like a Yoruk churn. The result was perfect. The fat layer rose to the top and the vaccine flowed from the faucet at the bottom." While the normal production method resulted in one-third casualties and production could not meet the country's needs, the Turkish method was able to increase production twice as much and at a cheaper cost.[12]

The Supreme Council of Health also convened in February 1946. According to the report dated February 7, 2,618 people had spotted fever in 1945. This meant a 37% decrease when compared to the data of 1943 and 1944. This rapid decline in the rates was attributed to the nationwide vaccination in the last half of 1945. In 1945, in accordance with the decision taken by the Council, all of the identified masses were vaccinated.

According to the report, five tons of pure D.D.T. ordered to the United States through the Red Crescent and about 50 tons ordered by companies had not yet arrived in the country at the time of the Council meeting. On the other hand, domestic laboratories were making regular deliveries. The D.D.T. thus procured had been shipped to every province. With these D.D.T.'s, a lice eradication campaign was initiated, starting with the villages where the disease had broken out and the villages with high levels of lice, distant from district centers and along transportation routes. The Ministry of Justice was advised to use D.D.T. to control lice in prisons, the Ministry of Public Works in construction sites, the Ministries of Economy and Monopolies in factories, the Ministry of Transportation in land and sea vehicles, and the Ministry of Agriculture in forestry and agricultural enterprises and schools. In addition to the distribution of D.D.T., the Ministry distributed 15 tons of A L. 63 lice-killing powder to the eastern provinces. This powder, which was purchased in the form of a preparation, contained naphthalene and crezol-like substances, which also had lice-killing properties. When the laundry was sprayed with this powder, lice were completely killed within 24 hours and lice were not seen for at least a week.[13]

Since 1945, D.D.T. has been widely used, and it would be useful to give brief information about how it is used and how its production started in Turkey.

2.1. The Use of D.D.T. and the Start of Production in Turkey

Although D.D.T. was first synthesized in 1874 by Austrian chemist Othmar Zeidler, its insecticidal effect was discovered by Swiss chemist Paul Hermann Müller in 1939. During World War II, it was used against malaria and typhus caused by insects. Müller was awarded the Nobel Prize in Physiology or Medicine in 1948 for this discovery.[14]

After Switzerland, by 1945 it was used by almost all developed countries. It had even become the most important preventive medicine for American and British troops in Africa and the Far East. This drug was also intended to be produced in Turkey. For this purpose, Chemist Professor Nami Serdaroğlu, an expert from the Ministry of National Education, had succeeded in producing this substance with exactly the same properties. The Ministry of Economy and other relevant ministries were engaged in this matter and Serdaroğlu was tasked with producing this substance in large quantities. During these years, the Ministry of Economy was busy building a facility for this purpose. The Ministry of Health supported the production of D.D.T. In fact, the Minister of Health of the time, Sadi Konuk, believed that the production and use of this substance in large quantities would be a great advance in terms of public health and made the following statement in the Parliament: "I can even say that mosquitoes, bedbugs and fleas will be a thing of the past, maybe we will have to look for samples of them."[15]

2.2. Lice Fight with Pure D.D.T.

2.2.1. Preparation of Melt Solution of Pure D.D.T. and Chemical Spraying of Laundry

As a solution, a 4% solution of D.D.T. in alcohol was prepared. To do this, 4 grams of D.D.T. was added to 100 cc. of 96% alcohol and shaken. If there was a problem with the dissolution, the bottle was placed in hot water. These main melts had to be diluted 200 times before reconstitution was used. For this purpose, a gas can was filled halfway with hot water, if possible, and 100 cm of the main D.D.T. solution prepared as written above was poured into it and the can was completely filled with water. When the prepared solution was placed in a glass container, it was seen to have a white color.

In the case of body lice, previously washed and dried clothes were soaked in D.D.T. solution, left for a while, wrung out and dried. People who wore clothes that had been sprayed and dried in this way could not get lice on their bodies. Treated laundry retained its lice-killing properties for a long time. Even after several washings, this property was not lost. In the case of head lice and hair lice, diluted D.D.T. was poured on the head and hairy areas and allowed to dry on its own after spreading it to the hair and hair follicles. In these years, it was thought that the amount of D.D.T. used in lice control was not harmful to people's health.[16]

3. Typhus Fight in 1946- 1947

The measures taken in 1945 had immediate effect in 1946. On March 29, 1946, five teams were operating in Istanbul to combat infectious diseases in the city. The successful work of these teams, which provided free vaccinations as well as screening, was appreciated by the Ministry and Akşam newspaper, one of the media organs of those years.[17] Thanks to this selfless struggle, the number of spotted fever cases decreased by 44% compared to the previous season. These figures can be seen in the table below.

Table 1. Number of Typhus Cases in the Season 1945-1946

	November	December	January	February	March	April	May (For 15 days)
1944-45 Season	160	329	421	359	411	294	210
1945-46 Season	121	176	171	234	266	207	50

Source: İstanbul Seririyatı, Şubat 1946, p. 37.

In the first half of 1946, the places where the fight against typhus was most intense were Fatsa, Yozgat, Bolu and Konya. It would be useful to give information about the situation and the struggle in these places.

Fatsa Contagion

The outbreak in Fatsa occurred in the village of Gemenos (Yeniköy) in January. The disease could not be prevented due to the negligence of the local organization and after infecting 59 people in this village, it spread to 15 villages. The ministry became aware of the situation only on February 19. The health inspector in the region, the director of health in Samsun, the government physician in Ordu, five health officers, three from the Ministry's organization and two from the army center, two malaria guards, the government physician and health officer in Fatsa were assigned for the fight.

A sufficient amount of vaccine and D.D.T. was sent to the region for the fight. Within a month, the aforementioned team vaccinated 17,851 people in 45 villages and sprayed the laundry of 30,000 people. The fight had an immediate effect and the chain of spread was broken, and after March 20, with the exception of one case in the center of Fatsa, no spotted fever was seen in this region. As a result, the epidemic, which caused 144 people to fall ill and 20 people to die, was stopped. However, considering the importance of the outbreak, the Ministry assigned one infectious diseases mobile combat physician and two Ministry mobile health officers to the region.

Yozgat Contagion

In 1946, the spread of 30 cases, which first appeared in a village in Çekerek district of Yozgat and then in a village in Sorgun district, was prevented by vaccinating 3,527 people and spraying the laundry of 24,000 people.

Bolu Contagion

The disease spread to seven villages in the central district of Bolu due to the failure of a village mukhtar to report the disease in his village. Thereupon, vaccination and D.D.T. drills were emphasized, and the local organization was reinforced with a team sent from the center. Thus, the beginning of the epidemic could be ended with 34 cases.

Konya Contagion

In the first months of 1946, the number of spotted fever cases in Konya province was higher than in other provinces. The 49 cases detected belonged to 18 different villages. Thanks to the very good functioning of the communication and struggle works, the beginning of an important epidemic could be stopped.

From August 1945 to May 1946, during the spotted fever season, the struggle of the Ministry of Health was organized according to the following principles.

a) To give importance to communication and to use every means to ensure that the public informs the organizations of infectious diseases and febrile diseases lasting longer than 48 hours,

b) To vaccinate against typhus the inhabitants of places where the disease broke out in the previous season and those exposed to the danger of the disease,

c) To vaccinate everyone in the villages surrounding the infected village and to spray all the laundry of the citizens with D.D.T.

These measures yielded positive results and it was decided that in the next season, in addition to these measures, revaccination of those who had been vaccinated the previous year and general vaccination would be administered in the areas where new diseases emerged and in the villages around them.

However, in order to facilitate implementation by reducing the number of vaccinations to two, the Ministry commissioned examinations at the Institute of Public Health. According to the positive results of the examinations, the amount of vaccine was increased (1 + 2 cc.) and the vaccination period was increased to 10 days, and it was seen that positive results were obtained when the vaccination was reduced from three times to two. Therefore, the Ministry had decided to carry out vaccination on this basis next year. The Ministry had ensured that sufficient quantities of D.D.T. were imported into the country as part of the fight against the disease. Through contacts with the Ministry of Customs and Monopoly, the Ministry ensured that the alcohol used for the production and dissolution of D.D.T. was sold at the minimum tariff. In this way, a large scale lice control was made possible with the funds in the Ministry's budget. In addition, it was also ensured that alcohol D.D.T. solution was sold in all Tekel dealers in the country to enable the public to fight against lice and other pests.[18]

As in 1945, one of the most important agenda items of the meeting of the Supreme Council of Health held on November 14, 1946 was the fight against typhus. According to the information obtained from the report of this meeting, vaccination in 1943 and D.D.T. in 1945 were added to the methods of controlling spotted fever by isolating the patient and using technical means in only places where there were cases until 1943. The number of cases decreased to 3,251 in 1944, 2,618 in 1945 and 780 in the first ten months of 1946. Similarly, the mortality rate in typhus decreased from 7% in 1943 to 9% in 1944, 5% in 1945 and 7.6% in the first ten months of 1946. This result was attributed to the village visits for screening purposes and the intensive efforts of the organization to notify the cases that had been overlooked, as well as the successful results of the vaccination practice that had been implemented for three years.

Without waiting for the outbreak of typhus, the Ministry strictly carried out vaccination as a preventive measure. In November 1946, teams were continuing their fight against typhus in places such as Gümüşhane, İspir, Fatsa, Reşadiye and Araç, which were previously important places of outbreak of the disease. The amounts of D.D.T. and vaccine used in the last years both in these places and throughout the country are presented in the table below.

Table 2. Vaccine and D.D.T. Amounts Consumed Until November 1976

Years	D.D.T. %10	D.D.T. pure	Vaccination cc.
1943	-	-	479.648
1944	-	-	2.476.947
1945	2.169	452	4.866.587
1946 (for ten months)	-	2.020	2.774.495

Source: İstanbul Seririyatı, Aralık 1946, p. 66.

While the fight against typhus at home was in full swing, intense efforts were being made to prevent typhus originating abroad from entering the country. In 1946, it was the eastern borders that threatened Turkey in this context. Because, in the first months of 1946, cases of hummai racia and typhus broke out in Iran. In April, the number of cases of fever had risen to 2,453 and the number of typhus to 45. In order to prevent the transmission of these diseases to Turkey, local organizations in Hakkâri, Van and Ağrı provinces were reinforced with 14 health officers and two bacteriologists sent from the headquarters, and typhoid and typhus mixed vaccine and D.D.T. were administered. The fight against typhoid fever in Ağrı and Van provinces ended in early November, and was nearing its end in Hakkâri. With these measures taken, there were no cases of fever rachia in the Eastern provinces and typhus was reduced compared to the same months of the previous year.[19]

At the end of the year, as of December 30, 1946, the fight against typhus continued with vaccination and D.D.T. application in order to take precautions in advance. In this context, 12,227,661 people were vaccinated against typhus, 7,265,642 pieces of laundry were sprayed with D.D.T., 18,196 public places were

cleaned, 243,110 houses were disinfected, 2,948,427 people were subjected to compulsory cleaning and 2,120 kilograms of D.D.T. was consumed.[20] Following these figures, Dr. Behçet Uz, the Minister of Health of the period, stated in the Parliament on December 27, 1946 that the situation of the country in terms of infectious and epidemic diseases in 1946 was more satisfactory than in previous years, and that there was a 38% decrease in the number of typhus cases compared to the previous year.[21]

In 1946, the information obtained from the meeting of the Supreme Health Council dated February 24, 1947 about the fight against typhus also provides details about the struggle. Accordingly, mass typhus cases occurred in Reşadiye, Sürmene, Elmalı and Tekirdağ center in late 1946, but the spread of the disease was prevented by effective combats.

In March 1945, the disease was detected in Reşadiye district of Tokat province as a filiation of the epidemic seen in Fatsa. Although vaccine and D.D.T. were administered ahead of time, 14 cases occurred in Halaçlı and Kortolos villages of the district in late October. Thereupon, a special team was organized and D.D.T and vaccine were administered and the fight against the disease yielded positive results in a short time.

In late November, a localized epidemic consisting of 18 cases was observed in Arpalı village of Sürmene district of Trabzon province. This was prevented from spreading as a result of the activities of both the local health organization and the team sent from the headquarters for the control of ankylostoma.

In late November 1946, an epidemic that started with six cases in Semayük Village of Elmalı (Bozüyük) district of Antalya province ended with eight cases. At the beginning of December, eight cases were seen in the center of Tekirdağ, six among the newly dispatched conscripts and two from the public. While these patients were isolated, necessary precautions were taken in Terme, the transfer branch of the conscripts. In 1947, until February, only 13 cases had emerged in Azdavay district of Kastamonu province and the fight against typhus was still ongoing at the time of the report. When local typhus cases are evaluated, it is seen that mass and continuous typhus cases were not encountered during these months.

The Ministry used only D.D.T and vaccine in its struggle. In one year, 2,200 kilos of D.D.T. and 2,050 kilos of vaccine were applied all over the country. In some regions, taking into account the very poor and those who had only one underwear, it was necessary to fight against the disease by spraying a dense D.D.T. solution on the inside of the clothes with a sprayer. For this reason, it was decided to purchase possible devices to make this method widespread. Furthermore, a product called Ar 50 Velsicol, imported from the USA, was tested and it was found that this product easily dissolved 25% of D.D.T. and was both cheaper and better than alcohol, and an order was placed. With all these measures, the number of cases was reduced from 2,618 and 139 deaths in 1945 to 1,494 and 103 deaths in 1946.[22]

In the first week of December 1947, typhus cases increased in Istanbul. In response, the Provincial Directorate of Health took new measures. These measures included the distribution of brochures to inform the public about typhus, the acceleration of the typhus vaccination of students in schools, the vaccination of those who asked for it, and the intervention of teams to clean the dirty and lice-infested people seen lying in various parts of the city.[23]

In fact, the Provincial Health Directorate was making great efforts to prevent all infectious diseases. Vaccinations were given against typhoid and typhus, and all bachelor's rooms, casinos, coffee houses, cinemas, theaters and transportation vehicles were subject to strict control. The municipality opened a bathhouse in Balat, as it had opened one in Kasımpaşa, so that poor people could bathe for free.[24]

4. Typhus Fight in 1948-1950

In 1948, maximum use was made of D.D.T., a very effective substance in the fight against typhus. Moreover, the public voluntarily obtained and used this substance. In addition, thanks to the vaccines administered, typhus cases decreased compared to previous years. In 1948, the number of typhus vaccinations, D.D.T. and cleaning activities were 2,171,987 and the number of people whose laundry was D.D.T. treated was 3,514,028. The number of all public places such as inns, hotels and baths cleaned was 56,811 and the number of disinfected houses was 379,620. The number of people subjected to compulsory bathing and cleaning was 193,723. The amount of pure D.D.T. consumed was 20,487 kg. and the amount of D.D.T. (10%) was 13,245 kgs. The number of sprayers sent was 733. Due to the above-mentioned measures, there were no mass typhus cases in any part of the country in 1948. In this year, the number of people infected with the disease was 394 and the number of deaths was 25.[25]

By 1949, emphasis was placed on taking preventive measures to prevent the outbreak of disease in the country and to prevent the spread of possible cases. In this regard, D.D.T. was applied continuously and systematically throughout the country, and protective vaccines were administered where there was a threat of infectious diseases. When an epidemic broke out, health teams were immediately dispatched to the scene of the outbreak, and the local health organization, on the one hand, and the mobile warfare teams, on the other, carried out screening and combating in general and in areas where a particular disease was concentrated. In addition to its own efforts, the Ministry of Health ensured that other authorities and the public were also involved. In that respect, propaganda was given special importance. In the fight against typhus, 470,916 people were vaccinated in the first four months of 1949. The question of the effectiveness of the measures taken in the last five years can be answered in the table below.[26]

Table 3. Typhus Cases in 1945-1949 (first four months)

Year	Cases	Deaths	Death Rate
1945	2.620	122	4,6
1946	1.497	100	6,6
1947	641	56	8,7
1948	394	25	6,3
1949 (first four months)	91	5	5,4

Source: İstanbul Seririyatı, Haziran 1949, p. 37.

Based on the figures above, while the number of cases was decreasing, good news was also coming from abroad. The inventor of penicillin, Oxford University Professor Howard Walter Florey, who had come to Istanbul for the Pathology Congress, gave a statement to Hıfzı Topuz from Akşam newspaper on May 15, 1949. In his statement, Florey stated that typhus could now be completely cured within 24 hours to three days and would no longer be fatal, thanks to the drug called Chloromycetin, which had been discovered in the United States only a few months earlier for the treatment of typhus. This news was presented on the front page of the newspaper as an important development.[27]

By 1950, the number of cases in the first four months of the year was 82, while eight of the patients had died.[28] According to the information compiled by İnci Hot from the medical journals of the period, 258 people were infected with the disease in 1949, while the number of people who died was 20. In 1950, 223 people were infected and 14 of them died. Then, until 1956, the number of cases was almost one tenth of that of 1950, while the number of deaths was recorded as zero. In 1956-1958, only three people died.[29] These results show that typhus is no longer on the agenda of the country.

Conclusion

Typhus has been an infectious disease that has caused the death of many masses of people throughout history. The disease has manifested itself as an epidemic especially during extraordinary periods such as wars and migrations when hygiene conditions were not adequate. The last time it was seen as an epidemic in Turkey was during World War II.

Returning to normal social and economic conditions immediately after the war was one of the primary conditions for successfully combating typhus. In this study, which focuses on the fight against typhus between 1945 and 1950, the determined will and coordinated efforts of the central government and local administrations to solve the problem once and for all was one of the biggest factors in the elimination of typhus as a feared disease by the end of the period.

Since 1943, the use of vaccines in the fight against typhus and the rapid progress of the practice since 1945 can be said to be one of the two most important reasons for the success of the struggle. It was seen that the unique production methods and devoted efforts of the Institute of Public Health were very effective in increasing the amount of vaccine in the country. Another factor in the success of the struggle was the intensive use of D.D.T. in those years.

As a final word, it can be said that closely following the developments in the world and utilizing national resources at the highest level were effective in preventing typhus from becoming a nightmare for the Turkish people, a disease that caused massive deaths all over the world.

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