

OVERVIEW

The history of tuberculosis: the social role of sanatoria for the treatment of tuberculosis in Italy between the end of the 19th century and the middle of the 20th

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Keywords

History of tuberculosis • History of sanatoria • Social role of sanatoria

Summary

Since ancient times, the most frequently prescribed remedy for the treatment of tuberculosis was a stay in a temperate climate. From the middle of the 19th century to the middle of the 20th, Europe saw the development of sanatoria, where patients were able to benefit from outdoor walks, physical exercise and a balanced diet. Moreover, the institutionalisation and isolation of patients deemed to be contagious remains one of the most efficacious measures for the control of this type of infection. The first sanatorium opened in Germany in 1854, while in Italy the earliest experiments were conducted at the beginning of the 20th century. At that time, it was widely believed in Italy that pulmonary tuberculosis could improve in a marine climate. By contrast, the scholar Biagio Castaldi described the salubrious effects of mountain air and documented a lower incidence of tuberculosis among mountain populations, which supported the hypothesis of a hereditary predisposition to the disease. In 1898, several local committees (Siena, Pisa, Padua) were founded to fight tuberculosis. The following year, these gave rise to the Lega Italiana (Italian League) under the patronage of the King of Italy, which helped to promote state intervention in the building of sanatoria.

The pioneer of the institution of dedicated facilities for the treatment of tuberculosis was Edoardo Maragliano in Genoa in 1896. A few years later, in 1900, the first specialised hospital, with a

capacity of 100 beds, was built in Budrio in a non-mountainous area, the aim being to treat patients within their habitual climatic environment. In the following years, institutes were built in Bologna, Livorno, Rome, Turin and Venice. A large sanatorium for the treatment of working-class patients was constructed in Valtellina by the fascist government at the beginning of the century, in the wake of studies by Eugenio Morelli on the climatic conditions of the pine woods in Sortenna di Sondalo, which he deemed to be ideal. In December 1916, the Italian Red Cross inaugurated the first military sanatorium in the “Luigi Merello” maritime hospice in Bergeggi (SV) to treat soldiers affected by curable tuberculosis. In 1919, a specific law mandated a 10-fold increase in funding for the construction of dispensaries and sanatoria. As a result, the Provincial Anti-tuberculosis Committees were transformed into Consortiums of municipal and provincial authorities and anti-TB associations, with the aim of coordinating the action to be undertaken. In 1927, the constitution of an Anti-tuberculosis Consortium in every province became a legal obligation.

Despite this growth in social and healthcare measures, tuberculosis in Italy continued to constitute a major public health problem until the advent of antibiotics in the 1950s. Until that time, the sanatorium played a leading role in the treatment of tuberculosis in Italy, as in the rest of Europe.

Introduction

Since ancient times, the institutionalisation of patients who constitute a risk of contagion has been one of the most efficacious measures for the control of pulmonary infections, including tuberculosis (TB) [1].

In the second half of the 19th century, the conviction spread that particular climatic environments could contribute to curing TB. Subsequently, the most frequently prescribed remedy for pulmonary forms was a stay in a temperate climate [2].

Thus, from the middle of the 19th century to the middle of the 20th, Europe saw the development of sanatoria, where patients affected by tuberculosis, in addition to being isolated from the rest of the community, could benefit from a period of convalescence that included

treatment programs and outdoor excursions on foot or on horseback. Patients were hosted in locations where they could enjoy complete rest, a balanced diet, fresh air, sunshine and moderate physical exercise under strict medical supervision. Indeed, in such places, increasing importance was attached to the role of rest in the process of treatment, as also to the implementation of particular norms of hygiene [3].

The origin of sanatoria as places for the treatment of tuberculosis

In Europe, the first sanatorium was founded in 1854 by Hermann Brehmer in Germany, in Goebersdorf in Silesia, a village on the border between Poland and the Czech Republic. Brehmer stressed the therapeutic effect

of the climate in the treatment of phthisis. His method of treatment spread throughout Germany, France and Switzerland, especially in the region of Davos, in the Engadin Valley, where the first high-altitude sanatoria were opened for paying patients [4].

The new sanatoria were designed in such a way that patients could stay in single rooms or rooms with a few beds, which usually gave onto large terraces where inmates could take so-called “sun baths”. The buildings were surrounded by spacious meadows and tree-lined gardens, where guests could go for long healthy walks. Patients stayed in the institution for very long periods – from a minimum of six months to seven, eight or even 16 years [5].

In Italy, Biagio Castaldi, who was himself affected by pulmonary tuberculosis, personally experienced the positive effects of a balanced diet and a stay in the mountains at the beginning of the 20th century, supporting the theories widely held in the rest of Europe at that time. In an 1858 publication, Castaldi had first reported that the incidence of phthisis declined as altitude increased, and that the disease was very rare at altitudes above 1000 m. On the basis of the observation of a lower rate of mortality due to pulmonary TB among mountain populations, it was thought that sanatoria should be located at high altitude. Moreover, it was believed that patients had a hereditary predisposition to TB, while the possible role of isolation in limiting the spread of the disease was overlooked [6].

In the same period in Italy, it was widely believed that a maritime climate could also facilitate the healing of pulmonary tuberculosis and contribute to the resolution of cases diagnosed in an initial stage. Antonio Sciascia was the first to apply heliotherapy to the treatment of tuberculosis, claiming that the forms involving the lymphatic ganglia, joints and bones, skin, serous membranes and kidneys were those which could benefit most [7].

In the newly founded Kingdom of Italy, the first mountain “colonies” were instituted in Florence in 1853, in Prato in 1864 and in Pistoia in 1866, while the first seaside hospices were opened in Viareggio and Rimini in 1874 by the Bolognese Opera Pia Ospizi Marini [8].

In 1871, the Piedmontese Marine Hospice opened in Loano in Liguria. This was the first Italian hospice for children and young people of both sexes affected by bone, articular, cutaneous and glandular tuberculosis [9].

In the early years of the 20th century, again in Loano, the Hospice instituted summer and winter resorts for school-children who were “frail, lymphatic, children of tuberculosis sufferers” in another building that it owned [10]. In the same period, another new therapeutic intervention for tuberculosis was invented by Carlo Forlanini, an Italian physician, in 1882; he created the first artificial intrapleural pneumo-thorax by collapsing the lung and filling the pleural cavity with nitrogen [11].

In Boston in 1889, the American Society of Climatology recognised the sanatorium as the best opportunity of cure for pulmonary TB, particularly for working-class patients. In Europe, the first example of such a facility was the section assigned to host persons of modest

economic means, which was instituted in Göbersdorf in 1874 [12].

The fight against tuberculosis in Italy at the beginning of the 20th century

In Italy, between 1908 and 1914, an average of 84,335 people died of tuberculosis each year. The spread of the disease was facilitated by the insalubrious conditions in which much of the population lived, in which scant attention was paid to the most elementary norms of hygiene, whether in cities or in the country, at home or in the workplace [13].

In Europe, the first National League against TB was founded in France in 1891. This was followed in 1893 by the foundation of the Swiss Association, which was instituted in order to combat TB and to promote the building of sanatoria. Two years later, in Germany, the German Central Committee for the fight against tuberculosis was established.

In Italy, an organised effort to fight tuberculosis began at the end of the 19th century. This was initially conducted by circumscribed voluntary initiatives, which were, however, limited by their scant relationships with the newly constituted Anti-TB League (1899).

The pioneer of the fight against tuberculosis in Italy was Edoardo Maragliano, who, in 1896, founded the first Italian dispensary and the first ward for the diagnosis of TB in the Medical Clinic which he ran at the University of Genoa [14].

In Italy, the drive to fight TB came from below, especially from the poorer classes, who were hardest hit by the disease; in Pisa in 1899, a committee was set up with the aim of building a sanatorium to treat these people. Subsequently, this committee also organised an anti-TB propaganda conference. In Padua in the same year, the first Regional Committee of the National League against tuberculosis was founded through the unification of the first local committees (Siena, Pisa, Padua) under the patronage of the King of Italy and the guidance of the President, Guido Baccelli. In 1900, on the initiative of the Italian League, a congress on tuberculosis was held in Naples; its concluding motion cited two important objectives. The first was to institute a Chair for the experimental and clinical study of tuberculosis; the second was to enlist the aid of the state and of public authorities for the construction of sanatoria.

The very same year, the first specialised hospital institute was inaugurated in Budrio, a village in the Province of Bologna. Built with the aid of a generous private donation, it was equipped with 100 beds. The decision to build a sanatorium in a non-mountainous area was motivated by the desire to keep patients in their habitual climatic environment. This meant that patients could be supported and assisted more easily by their family members and maintain their daily habits – factors deemed conducive to achieving a more stable “cure” than would be possible if the patient were transferred to a mountain environment [15].

Contemporarily with the Bolognese sanatorium, another institute for the treatment of TB was founded in Gries, in the Province of Bolzano.

Among the staunchest advocates of the validity of this therapeutic approach in Italy was Giulio Bizzozero, who claimed that caring for underprivileged patients in ordinary hospitals or at home, where medical assistance was extremely poor, would increase the risk of contagion.

In Italy, the first large sanatorium devoted to treating the poor was built in 1903 in Valtellina, at an altitude of 1250 m, in the pine woods of Sortenna di Sondalo, where the climatic conditions were deemed to be favourable. Dedicated to the memory of Eugenio Morelli, the facility was set in this location on the recommendation of a young doctor, Ausonio Zubiani.

Subsequently, the fight against TB in Italy was carried forward around the city of Milan, first through the activities of the dispensaries, with the construction of the People's Sanatoria of the City of Milan in Prasomaso, and then through the building of the large sanatoria in Garbagnate and Pietra Ligure by the Milanese Opera Pia di Santa Corona [16].

Anti-TB dispensaries were promoted in Italy from 1904 onwards (in the city of Livorno), and in 1905 the Umberto I Hospice was inaugurated in Rome.

In Turin in 1909, the new San Luigi Hospital was founded in Mirafiori, which was then in open country. In the following year, the municipal "Preventorio" (prevention centre) was opened. Promoted by the Piedmontese Society of Hygiene, this facility was run by a general practitioner, who was aided by an assistant physician, a "healthcare educator" and 34 home health inspectors; these latter were chosen from among municipal teachers and were charged with providing hygiene advice and gathering information on social conditions. The Preventorio, the function of which was essentially educational, was open every day, including public holidays, and also acted as an intermediary for the provision of subsidies in the form of money and food [17].

In 1911, a large dispensary opened in Rome as a result of a donation by Queen Margherita, and was entirely run by the Italian Red Cross.

In Bologna in March 1914, the local Anti-tuberculosis Association opened the first anti-TB dispensary in the Region, while at the same time a phthisis ward began operating in S. Orsola Hospital. In Venice, the San Marco Hospital for the treatment of pulmonary tuberculosis was founded in the same year [18].

Thanks to the institution of these facilities for the prevention and treatment of TB in various Italian cities, a marked reduction in the epidemic of tuberculosis was seen between 1900 and 1914.

The social and healthcare role of the sanatorium in the fight against tuberculosis

The first Italian Congress for the fight against TB, which was held in Milan in 1906, dealt with subjects that were of

extraordinary importance for the time, including the use of dispensaries as a means of both prophylaxis and treatment [19].

On 5 November 1910, the Italian Federation of Anti-tuberculosis Societies (FIOA) was founded in Genoa with the aims of coordinating the various initiatives that had been undertaken in Italy in the previous years and implementing a common approach in the various institutes.

In 1915, the Society for the Prevention of Infantile Tuberculosis (Mangiagalli) was founded in Milan, where it assisted the children of phthisis sufferers. Similar initiatives were undertaken in other Italian cities (Turin, Verona, Palermo, Alessandria, Trapani, Rome, Reggio Calabria), thanks to generous donations by banks and private citizens [20].

Before the First World War, the fight against tuberculosis was largely carried out by voluntary societies and spontaneous associations. During the war, however, when the TB epidemic flared up once again, it became clear that more structured intervention was urgently needed in order to tackle this re-emerging public health problem. Thus, the stage was set for the state to become directly involved in organising and planning healthcare and social solutions to the problems connected with the disease [21].

First of all, facilities for the treatment of military personnel were set up, with the aim of providing appropriate and timely treatment for combatants in the war as soon as the first symptoms of the disease appeared. In December 1916, the Directorship of Military Healthcare instituted wards for the diagnosis of TB, and the Italian Red Cross inaugurated the first military sanatorium in the "Luigi Merello" Maritime Hospice in Bergeggi (SV), to treat soldiers suffering from curable TB [22].

At the end of the war, the Army closed down its TB hospitals, with the sole exception of its sanatorium in Anzio. Similarly, the Italian Red Cross disbanded its wartime units, directing its efforts to the construction of new civilian sanatoria; these made a significant contribution to the fight against TB in the 1920s and 1930s. In addition, the Red Cross established "prevention centres" for the care of the children of tuberculosis sufferers. One of the best-known of these centres was the Fara Sabina centre; opened on 16 November 1918, it had a capacity of 100 beds. On 16 July 1919, however, it was closed down and subsequently converted into a boarding school for the children of TB sufferers [23].

In 1919, a specific law increased funding 10-fold and granted credits and subsidies for the construction of dispensaries and sanatoria. As a result, the Provincial Antituberculosis Committees were transformed into Consortiums of municipal and provincial authorities and anti-TB associations, with the aim of improving the coordination and uniformity of the action to be undertaken. The executive branch of these consortiums consisted of the Dispensaries, the tasks of which were: to identify cases of TB (even in latent forms); to provide instruction on healthcare and prevention; to offer moral and material support for the sick (particularly children, who were transferred to maritime and mountain "colonies"); and to carry out activities

of propaganda, statistical data collection and the promotion of studies and research [24].

In Italy, as in the rest of Europe, the 1920s saw the emergence of several private and state initiatives in various cities. These constituted a nationwide network for the active prevention of TB in high-risk populations, such as children, adolescents and the children of TB sufferers. Founded by the government in 1925, the National Society for Mothers and Children institutionalised and oriented these initiatives, taking charge of the prevention of tuberculosis among the children of TB sufferers through provisions and measures for primary and secondary prevention. This innovation was part of a series of dispositions and norms issued by the government, and highlighted the central role of the state in the fight against tuberculosis [25].

In 1923, provincial Prefects were granted the option to mandate the foundation of Consortiums. Subsequently, in 1927, all Provinces became legally obliged to constitute an anti-TB Consortium as a public body dedicated to managing the fight against TB, to assisting the sick, and to safeguarding healthy subjects in their respective territories. Specifically, the Decree Law of 17 October 1927 instituted obligatory insurance against tuberculosis for all workers, a veritable milestone in the fight against the disease [26].

In Naples in 1925, the National Congress on tuberculosis tackled the following issues: sanatoria in the mountains, in the plains and on the coast; preventive vaccination; and funding for the fight against tuberculosis. During this Congress, the Italian Society for Scientific Studies on Tuberculosis was founded. Thanks to the joint action of the state and private individuals, the number of beds in the sanatoria increased from 12,000 in 1923 to 32,000 in 1930 [27, 28].

Conclusions

The sanatorium regimen planned to cure tuberculosis with Galenic principles of hygiene: isolation, fresh air, exercise and good nutrition. Eminent physicians supported these remedy for the treatment of more serious forms of the disease for a few decades. Despite the growth in social and healthcare measures, tuberculosis in Italy continued to constitute a major public health problem until the advent of antibiotics in the 1950s. Until that time, the sanatorium played a leading role as an efficacious means of treating tuberculosis in Italy, as in the rest of Europe.

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Conflict of interest statement

None declared.

Authors' contributions

MM and IB conceived the study, drafted and revised the manuscript. MM, VG, IB, MB, NLB performed a search of the literature. MM and VG revised critically the manuscript. All authors read and approved the last version of the manuscript.

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