

Sultan Mahmud II's diseases and cause of death from the perspective of medical doctor's and current medical literature

Hasan Sultanoğlu^{1,2} 
Zeynep Salman² 

İbrahim Topçu³ 

Raşit Gündoğdu⁴ 

¹ Department of Emergency Medicine, Faculty of Medicine, Düzce University, Düzce / Türkiye

² Department of History of Medicine and Ethics, Institute of Hamidiye Health Sciences, University of Health Sciences, İstanbul / Türkiye

³ Department of History of Medicine and Ethics, Hamidiye Medical Faculty, University of Health Sciences, İstanbul / Türkiye

⁴ Department of Social Service and Consultancy, Hamidiye Health Services Vocational School, University of Health Sciences, İstanbul / Türkiye

Abstract

The illness of Sultan Mahmud II, the 30th Sultan of the Ottoman Empire and the 109th Islamic Caliph, started to be discussed after his death. In this study, the possible illnesses of Sultan Mahmud II, his illness process and death were analysed by comparing the claims and explanations made by his physicians during his illness and death. The research includes: the incomplete document of Abdülhak Molla, the chief physician of the period; the book titled *Deux Annees de l'Histoire d'Orient 1839-1840* (Two Years in the East 1839-1840) written by Edmond De Cadalvene and Emile Barrault; the book titled *Relation Officielle de la Maladie et de la Mort du Sultan Mahmud II* (Sultan Mahmud II's Illness and Death) by Mac Carthy and Konstantin Kara Todori. The Illness and Death of Sultan Mahmud II, published in 1841; and, three reports sent by Karl Ambros Bernard to the Austrian government on different dates based on Jakob Neuner. In the light of current medical knowledge, the above-mentioned information and documents about the sultan's illness suggest that Sultan Mahmud II suffered from "lung cancer" and "alcohol withdrawal syndrome". It was concluded that his death was due to sepsis developing as a result of the infection caused by the disease and the deterioration of metabolite balances in the body.

Keywords: Sultan Mahmud II, lung cancer, alcohol withdrawal syndrome

Citation: Sultanoğlu H, Topçu İ, Gündoğdu R, Salman Z. Sultan Mahmud II's diseases and cause of death from the perspective of medical doctor's and current medical literature. *Health Sci Q.* 2023;3(4):229-39. <https://doi.org/10.26900/hsq.2129>

Corresponding Author:
Hasan Sultanoğlu
Email: drsultanoglu@hotmail.com



This work is licensed under a Creative Commons Attribution 4.0 International License.

Introduction

A Brief Description of Sultan Mahmud II Period

Sultan Mahmud II was the son of Sultan Abdulhamid I and Nakş-i Dil Vâlide Sultan, born on 13 Ramadan 1191/20 July 1785 [1]. Mahmud II, who was only four years old when his father Sultan Abdulhamid I died, was raised by Sultan Selim III. Selim III, during the fourteen-month reign of Mustafa IV, had frequent contact with Mahmud II and had sufficiently instilled everything he had to do when he ascended the throne and adopted his ideas on state administration. Therefore, Sultan Mahmud II learnt the necessary lesson from Selim III's weaknesses and tried not to make the same mistakes [2].

Mahmud II, the 30th Ottoman sultan and 109th Islamic Caliph, ascended the throne during the most troubled years of Ottoman history in terms of political, military and social aspects [3]. His reign, which began on July-28 1808, lasted 31 years without interruption until July-1 1839. In the first years of his reign, he experienced very bloody and intense events in a short period of time. After the Kabakçı Mustafa Rebellion of May-28 1807, which resulted in the dethronement of Sultan Selim III and his replacement by Mustafa IV, Alemdar Mustafa Pasha, the Ayan of Ruse, who came to Istanbul and stormed the palace with his troops and witnessed the murder of Selim III, suppressed the rebellion and brought Prince Mahmud to the throne, but Kabakçı was killed in the janissary revolt that took place a while later [4].

During this period, the Ottoman Empire had already entered a period of rapid decline. While the state was deteriorating financially and economically, factors such as the weakening of the state organisation, the lack of self-renewal in the army and educational institutions, and the lack of transportation and communication facilities were the main reasons that accelerated this process. The problems awaiting Sultan Mahmud II were not only the internal social collapse of the state and the corruption of its institutions. The 1789 French Revolution and the nationalist movements that started to spread in

the Ottoman Empire were also major external problems that gradually caused rebellions in the Ottoman Empire and shook the structure of the state [5].

Sultan Mahmud II was an intelligent, capable and prudent ruler who was well-informed of the period. He came to the conclusion that it was necessary to keep up with the period for the maintenance of the Ottoman Empire and that the solution to the problems was to change the structure of the classical period. With the reforms he carried out during his reign, which lasted for about 31 years, he extended the life of the state and enabled it to enter a new era. Mahmud II made changes in almost all institutions of the so-called classical period. Before he embarked on these reforms, he neutralised the elements that could oppose him, namely the ayyân, ulemâ and janissaries. Firstly, he broke the political and military power of the ayyân, then he abolished the Janissary Corps in 1826. In the same year, by establishing the Ministry of Evkaf-ı Hümayun and gradually centralising the foundations under this roof, he tied the ulema, the third of the opposition pillars, to the state a little more. It can be said that the process of removing the obstacles to reforms continued until the early 1830s [4]. After creating the infrastructure, he abolished the Janissary Quarry, conducted the first census in 1831 to determine the military potential of the Asâqir-i Mansure-i Muhammadiyya, which was established in its place, and then carried out an estate census to determine the tax opportunities of the country. In the same year, Takvîm-i Vekâyi', the first Turkish newspaper published in Istanbul, was published. From 1834 onwards, he re-established permanent embassies in the capitals of major European states [6]. In order to prevent the spread of infectious diseases, he adopted the quarantine procedure to be applied throughout the country. He took initiatives for a modern postal system and built a postal route from Üsküdar to İzmit. He introduced the passport procedure. He sent students to Europe to train specialists in various fields. He opened the schools of Medicine and Military. The ministries were transformed and new ministries were established.

Mahmud II completely transformed the classical Ottoman system. What was done in the Tanzimat period is related to the details of his reforms. Therefore, if one has to speak of a Tanzimat period, the beginning of this period is not November-3 1839, but the reign of Mahmud II [4]. Sultan Mahmud II, who turned the face of the Ottoman Empire towards the West with the reforms he made during his difficult reign, was exhausted by the troubles he experienced during his 31 years of military and politically turbulent and exhausting reign, and his ailments, which gradually emerged, increased even more towards the end of his life.

Materials and Methods

The research utilised the incomplete document of Abdülhak Molla, the physician of the period; the book *Deux Annees de l'Histoire d'Orient 1839-1840* (Two Years in the East 1839-1840) co-authored by Edmond De Cadalvene and Emile Barrault; Mac Carthy and Konstantin Kara Todori's *Relation Officielle de la Maladie et de la Mort du Sultan Mahmud II* (The Illness and Death of Sultan Mahmud II) published in 1841; and, three reports sent by Karl Ambros Bernard to the Austrian government on different dates based on Jakob Neuner. After the sources were obtained, the events were categorised according to time and place. After the analysis, the data were evaluated in light of current medical knowledge.

Findings

Opinions of the Physicians of the Period about the Sultan's Diseases

In this study, the possible diseases of Sultan Mahmud II, the disease process and the death of Mahmud II will be discussed and analysed by comparing the claims and explanations made by his physicians during his illness and death. The thoughts, claims and determinations of the Sultan's physicians and other physicians who were consulted from time to time will be evaluated from the perspective of current medical knowledge and physicians.

During Sultan Mahmud II's illness, different diagnoses and treatments were proposed, and there were even mutual accusations between

the physicians who treated him. The first of these is revealed in the book titled *Deux Annees de l'Histoire d'Orient 1839-1840* (Two Years in the East 1839-1840) written by Edmond De Cadalvene and Emile Barrault [7]. Mac Carthy and Konstantin Kara Todori, the physicians they accused, did not delay in responding to these allegations and published a treatise entitled *Relation Officielle de la Maladie et de la Mort du Sultan Mahmud II* (The Illness and Death of Sultan Mahmud II) in Paris in 1841 [8]. Another document on the subject is the three reports sent to the Austrian government on different dates by an Austrian physician, Karl Ambros Bernard, based on Jakob Neuner. Finally, the incomplete report of Abdülhak Molla, the chief physician of the period, on Mahmud II's illness guides us. Physician Abdülhak Molla wrote a work titled *Rûznâme* on the course of Mahmud II's illness. However, due to the loss of this work, Abdülhak Molla's view on the subject has remained incomplete until today.

In order to evaluate the symptoms and diagnoses mentioned in the books and documents, it is necessary to start with Hekimbaşı Abdülhak Molla, who closely followed Sultan Mahmud II, especially in the last period, examined him and made the final decision on his treatment, rather than the aforementioned foreign physicians who evaluated the Sultan in a limited way and based only on consultation. In an incomplete report [9] written in the physician's own handwriting, there is brief information about the symptoms and the course of the disease. According to the document, the Sultan had been drinking for a long time, vomiting from time to time, and having diarrhoea to the point of weakness, but hiding these complaints by not telling anyone. When he stopped vomiting, he would fill his stomach with wine again. It is stated that he had inflammation in his lungs and a cough due to this inflammation, that the cough and inflammation started to bother the Sultan from December 1838 (Shawwal 1254) onwards, and that the Sultan stopped drinking for a while because the cough increased in intensity as he drank. Although the sultan drank raw milk for a few days on the advice of those who said that milk would cure his illness, milk consumption

exacerbated his diarrhoea. During this time, he concealed the fact that he had both diarrhoea and bleeding haemorrhoids. In response, Konstantin of Edirne, one of the palace physicians brought in, first stopped the milk and then alleviated his cough with the medication he gave. After ten days of abstinence, the Sultan's appetite was completely lost. The Sultan started drinking again. On the other hand, as a result of the diarrhoea exacerbated by the milk, the Sultan's weakness increased and a white layer formed on his tongue. In the meantime, pus started to come out with the cough, which proves the previous assumption that there was a wound in the lung. After February 1839 (Dhu'l-Hijjah 1254), he stopped drinking again out of necessity and his weakness increased. Abdülhak Molla became chief physician on May-15 1839. He examined the Sultan and observed extreme weakness, exhaustion, loss of appetite, increasing whiteness of the tongue, abdominal fever, pain in the liver and stomach, fever, mild malaria, cough and purulent sputum. Meanwhile, the Sultan hid the fact that he had bloody haemorrhoids even from the physician. Abdülhak Molla gave the patient linseed paste to suppress the bad odour coming from the stomach. He also stimulated his appetite by giving him a certain amount of alcohol in the morning, noon and evening. The Sultan travelled from the palace to Çamlıca in bad and rainy weather. Therefore, his cold recurred, his cough and fever increased. That night, loss of appetite, pus and bloody haemorrhoids increased and the next day he fainted three times. He fell ill in the mosque where he went for the Friday Greeting (the term used in the Ottomans for the Sultan to pray the Friday prayers in a public mosque and the ceremonies held in the meantime). He was taken to Çamlıca and stayed in bed for a day. The following Friday, the Sultan became heavier and was unable to pray. Thereupon, a minbar and a mihrab are placed in the courtyard of the mansion in Çamlıca, and although he tried to perform the Friday prayer, he was unsuccessful. In Abdülhak Molla's words, he "became an angel" and no more water passed down his throat [9]. The document ended here before it was completed (Figure 1).

We learn about Dr Neuner's evaluations and

findings about the Sultan's illness from the three reports Dr Bernard sent to the Austrian government. The last report, dated July-28, contains Dr Bernard's assessments of the illness discussed in a meeting with the physician Abdülhak Molla after the Sultan's death. Since the physician's evaluations in this last report are in harmony with his own report discussed above, they are mentioned in this section. According to the physician's statement, Sultan Mahmud II had been ill for a longer time than was known. The disease made itself felt gradually in the last three years of his life, but the critical period the state was going through and the extremely serious political events did not leave the Sultan any time to take care of his illness. Although the Sultan had been suffering from frequent relapses of his illness for three years, it was not possible to wean him from his habitual behaviour. He continued to drink strong liquor irregularly and this played a major role in the relapse of his illness. His drinking habit increased to such an extent that he drank rum, arak and then champagne in the morning. This was repeated three or four times a day. The Sultan denied that he was ill and did not follow the methods and diet recommended for the treatment of the disease. Those around him did not dare to advise him on this matter, which became a fixed opinion [10].

The first of Dr Bernard's reports to the Austrian government is dated June-19. His report begins with the findings that, contrary to the decisions taken in the previous consultation, the physician had tried to treat the Sultan with aromatic herbs using his own authority; that this had impaired the patient's health, that the Sultan continued to drink wine as before, and that those around him did not tell him that he should give up such habits, which were bad for his illness, and that he should follow the diet prescribed. At the consultation held on June-18 at 10 am, the palace physicians, Hekimbaşı Abdülhak Molla, Mac Carthy, Neuner, Konstantin Kara Todori, Stefanaki and Mahmud Efendi attended. The patient's symptoms included high fever, an uncomfortable cough, insomnia due to coughing, and weakness. According to Dr Neuner, the disease was tuberculosis in the second stage. However, he does not despair of the Sultan's

condition if he followed the prescribed diet. He recommended taravacum (a medicine obtained by boiling snails with wild chicory), myosciac [a pill containing henbane (bilsenkraut) extract], an herbal diet to alleviate the cough, and mineral water to be brought from Vienna to reduce the fever. The second report is dated June-22. At the ninth consultation, held at 11 a.m. on Friday June-21, the same physicians attended. In the past three days, the Sultan's condition did not change much. The symptoms of the disease were loss of appetite, vomiting, severe cough with bloody phlegm, insomnia, constipation, high pulse rate (120 per minute), high fever, bitterness in the mouth, lentil-sized white blisters on the tongue and redness in the urine. Despite this condition and all the insistence of the physicians and those around him, the Sultan could not be prevented from going to the Üsküdar Mosque for Friday Greetings [10].

According to the claims of Ed. de Cadalvene and E. Barrault in their works on the controversy surrounding illness, Mahmud II needed medical consultation only twice until the last two years of his life: once in 1828 when he suffered from a severe cold and once in 1837 when he had leeches applied to him for *lumbago* (low back pain). Allegedly, after the abolition of the janissary corps, the Sultan gave himself over to wine. In time, this became a habit and lasted for about ten years until his death. In the last year of his life, the Sultan, who drank every evening, complained of weakness, stomach pain, insomnia and nervous exhaustion. From the winter of 1839 onwards, a cough was added to these. On March-8 1839, a serious attack of coughing occurred and Konstantin Kara Todori was summoned. Kara Todori reported that the Sultan was fine and had a cold. As the complaints continued, Dr Neuner was brought from Austria. In the meantime, it was discovered by chance that he had bloody haemorrhoids, but the Sultan denied it. Anxious, Kara Todori asked for a consultation with the participation of other physicians. Those around him concealed the true nature of the disease from the Sultan. The Greek doctors suggested that the disease was a stubborn pneumonia, and in order to cure it, they boiled flax seeds and make the Sultan drink the

water. Then, in April, they started to give milk to the Sultan. These last two medicines disrupted the patient's digestive system and after a while, this treatment was abandoned. Abdülhak Molla, who was of the opinion that it was not right to suddenly cut off the need of the body accustomed to alcohol, defended the idea of giving alcohol to the Sultan in low doses. Although the Greek doctors were against this method of treatment, they did not raise a voice against it. According to the statements of Abdülhak Molla, Ed. de Cadalvene and E. Barrault, as a result of the treatments of "Greek physicians who were half doctors", towards the end of April the patient became more and more severe. In addition to his extreme weakness, the Sultan's behaviour, tastes and habits began to change. He refused his favourite foods and even alcohol. He often daydreamed and sometimes stared at one point for a long time. From time to time, he became too active to sit still and spoke by jumping from topic to topic. He even took a horse ride on the day of an important government meeting. In addition, the Sultan had a clouded mind [11].

Meanwhile, rumours spread that the Sultan had liver weakness and hepatitis. Excessive weakness demoralised his morale, which rose from time to time. On the other hand, bloody haemorrhoids, which continued for 11 days, caused him to lose blood and made him feel weak. On June-14, Dr Neuner attended the consultation. The Sultan was seriously agitated, his pulse was weak and his tongue was covered with yellow rust. There was also loss of appetite, digestive and intestinal disorders and constipation. Dr Neuner diagnosed the patient with stage three *phthisis tuberculosa* (pulmonary tuberculosis). According to him, the patient, who had only a short time to live, could be given emollients (*mucilagineux*) and tranquillisers. At the physician's request, the Sultan was taken to Çamlıca, where the air was fresh. On June-16, Mac Carthy and Ansaldi attended the consultation. These physicians state that the lungs were not as bad as Dr Neuner had thought. On June-21, the patient deteriorated. Despite this and the opposition of those around him, he wanted to attend the Friday Greeting. He rebuked those who wanted to oppose him and then collapsed on the ground because of using all

his strength on this occasion. Even in this state, he went to the Valide Mosque in Üsküdar for the Greeting. On June-23, the fifth consultation was held. On the other hand, Esmâ Sultan, worried about her brother, sent Julius Michael Millingen, a doctor she trusted, to the palace. On June-27, the sixth consultation was held with the participation of Millingen. Although the Sultan was in a very ill state, he wanted to read and dictate the writings on state affairs himself. However, his answers were not very healthy. While the other doctors were kept waiting in a nearby room, Millingen was taken to the Sultan's room. The patient's lips were dry, the edges of his tongue were red and there was a layer of rust that gradually turns yellow towards the centre. His teeth were also covered with a black layer of soot. The Sultan, whose face showed traces of drunkenness, responded to questions with a blank stare. On Friday, June-28, at about eight o'clock in the morning, it was thought that the Sultan was dead. Millingen was called in again. According to him, there was not much to be done for the Sultan, who was suffering from *delirium tremens* or *erethismus ebriosorum*, a disease caused by excessive use of alcoholic beverages and which causes confusion in the mental faculties. The only thing to do in this case was to alleviate the suffering of the patient. For this reason, he recommended that the Sultan be given the liquid boiled with two parts of valerian and sixty drops of laudanum in two ounces (58 ml) of water every half hour. After drinking half of this liquid, the Sultan, who could not sleep for five days, relaxed and fell into a deep sleep. The Sultan woke up after three hours and felt good. He sat for about an hour, smoked two cigarettes and ate. That night, instead of medication, the patient was given a mixture of linden, orange blossom and thirty drops of laudanum twice. The fever subsided and his pulse became a little more regular. At the Sultan's request, he was given some laxatives, but this was not effective. On Sunday morning, June-30, the effect of the medication waned and the patient began to lose strength. Thereupon, Millingen told Rıza Beg that it was a miracle that the Sultan lived for another twenty-four hours, and Hüsrev and Halil Pashas that if some measures were to be taken for the

possible disturbances that might arise upon the death of the Sultan, the time came (Figure 1) [11].

Mac Carthy and Kara Todori wrote a book to clear up the desecration of the Sultan's memory by Ed. de Cadalvene and E. Barrault. Their criticism is based on the diagnosis of delirium tremens. Mac Carthy and Kara Todori argue against this diagnosis, citing the works of the claimants themselves and the reforms made by the Sultan as evidence. Cadalvene and Barrault state in the second volume of their work (p. 62) that the Sultan was an accomplished calligrapher. However, those who suffer from the disease in question cannot engage in the art of calligraphy as their hands would tremble. Therefore, these findings contradict the diagnosis of delirium tremens. On the other hand, another important argument of Mac Carthy and Kara Todori was the reforms made by the Sultan. Because a Sultan who made such important reforms as mentioned above could not have been mentally ill. According to Mac Carthy and Kara Todori, the Sultan suffered from well-known dropsy (*goutteuse*). He also suffered from a sharp rheumatism in 1835, which they treated themselves. Another ailment was that the Sultan could not lie on his right shoulder. In the illness that was the subject of the discussion, the Sultan suffered from loss of appetite, nausea, vomiting and coughing. The Sultan also suffered from haemorrhoids, for which Kara Todori prescribed leech treatment. The Sultan did not follow the physicians' advice to rest and did not accept his illness. This tied the hands of the physicians. On June-16, the Sultan went to the dykes in Bahçeköy and fainted several times. The next day, Mac Carthy, Etienne Kara Todori (Konstantin Kara Todori's uncle) and Mahmud Efendi consulted the Sultan. The consultation reveals that the Sultan was mentally sound and engaged in the affairs of the cabinet. On June-21, on the Friday before his death, he ignored the warnings given to him not to attend the Greeting ceremony and to pray in his room [12].

Mac Carthy and Kara Todori testified that the patient was suffering from digestive distress at the last examinations. At the consultation on June-23, it was diagnosed that the disease was progressing rapidly and the Sultan

had only a short time to live. On 25 June, another consultation was held. On June-27, a surgeon named Monsieur Millingen attended the consultation. The Sultan's doctors gave him all the data they had and information about the diagnosis and treatment methods. Millingen entered with Neuner and Mac Carthy (Cadalvene states that Millingen examined the patient alone). After a long examination, Millingen stated that the patient was not in such a dangerous and bad condition as described to him, that the disease was a simple liver burn and stomach pain, and that he could recover in a few days with a light diet. He prescribed a stomach relaxant and flaxseed poultice as medicine. These explanations caused happiness in the palace. Thereupon, all physicians except Kara Todorı were sent home, with the condition to meet again on Saturday June-29. Millingen suddenly became the favourite of the palace and the Sultan's saviour. He was asked to come back the following day. On the night of June-28 Friday, the patient's palpitations intensified and his discomfort increased. Kara Todorı observed that the Sultan's face was white, his tongue was black as coal, and his skin was cold even though there was a fever inside, and informed the chamberlain. Millingen was summoned again. Millingen said that the patient had *delirium tremens* and that he should be given some opium. Thus, the disease he had diagnosed as a simple stomach and liver disorder turned into *delirium tremens* in one night. He recommended two moxibustions for the legs and *laudanum* for internal use. After drinking the opium liquid, the patient fell into a deep sleep. Stating that the patient would wake up completely cured, Millingen went further and suggested that the physicians be sent home. On Saturday morning, June-29, Monsieur Millingen and Kara Todorı visited the patient. When Kara Todorı tried to dress the moxibustion, the Sultan was hurt and expressed "Konstantin, you are hurting me". This is the reaction of a patient diagnosed with *delirium tremens* 48 hours before his death. In other words, the Sultan recognised people and addressed them by their names. After that day, no doctor examined the Sultan. Until the last minutes, the dose of opium water recommended by Millingen was increased and given to the Sultan. Millingen continued to

assure the chamberlain that the patient would recover. However, when he arrived at the palace on Monday morning, July-1 1839, he did not see much activity. He heard sad weeping sounds accompanying the voice of the imam: Sultan Mahmud passed away (Table 1) [12].

In the book written by Kara Todorı and Mac Carthy, in his last four days, the Sultan had symptoms such as redness of the face, intense fever, rapid pulse (140 beats per minute), headache, severe pain in the liver and abdomen, bloody cough, haemorrhagic discharge, dirty and bloody urine and fear of light. The patient was not delirious and did not tremble in his hands. Kara Todorı and Mac Carthy conclude from these data that there were no symptoms of *delirium tremens*. Kara Todorı and Mac Carthy state that although they had been the Sultan's physicians for several years, their role in the field of illness was no more than a bystander and that they had been relegated to a secondary role. Chief Physician Abdülhak Molla and Dr Neuner also receive their share of criticism. According to their claims, if the recommendations they had submitted to the physician had been fulfilled day by day, at least the progression of the disease could have been stopped. On the other hand, they were of the opinion that Neuner had diagnosed third-degree pulmonary tuberculosis (*phthisis tuberculosa*) based on pathological findings such as blood coming from the mouth and nausea, and that this diagnosis was insufficient [12].

Discussion

In this section, the symptoms, complaints and habits that caused Sultan Mahmud II's illness in his last period, as written in books, mentioned in documents and described in the report, are evaluated. Firstly, we will start with the report of Dr Bernard dated July-28 1839 about the illness of Sultan Mahmud II during his meeting with Chief Physician Abdülhak Molla after the Sultan's death and the information in the incomplete document written by Chief Physician Abdülhak Molla. The report mentions that Sultan Mahmud II had been suffering from frequent relapses of the disease for three years, that he had consumed too much alcohol in recent years, and that he did not follow the diet. This

situation shows that the Sultan's illness was not acute, but that he was suffering from a chronic disease. Increasing his alcohol consumption, smoking and not following the diet caused his illness to worsen. The acute onset of the disease and the presence of triggering factors suggest a "rapidly progressing lung cancer".

Today, the reasons that increase the risk of lung cancer include advancing age, heavy smoking history, nutritional disorders, family history

and genetic factors [13]. It is thought that Sultan Mahmud II's history of smoking and not paying attention to his diet (excessive drinking) prepared the ground for cancer. Lung cancer incidence and mortality rates increased markedly during most of the 20th century, first in men and then in women [14]. The overall 5-year relative survival rate for lung cancer is 25.4% despite treatment. Lung cancer survival is lower in men compared to women [15]. 5-year survival rate is low despite current treatment protocols. In the 19th

Table 1. Sultan Mahmud II's consultations and findings according to sources.

Source	Consultation and/or Examination Dates	Findings/Events	Consultant Physician/s
Incomplete document of Hekimbaşı Abdülhak Molla	December 1838 (Shawwal 1254)	The Sultan's cough increases	Abdülhak Molla
	10 days after December 1838 (Shawwal 1254)	Increased diarrhoea, haemorrhoidal bleeding and loss of appetite	Konstantin of Edirne
	February 1839 (Dhu al-Hijjah 1254)	Extreme weakness, exhaustion, loss of appetite, white tongue, pain in the liver and stomach, fever, cough and purulent sputum	Abdülhak Molla
	May 1839 (Rabi al-Awwal 1255)	Abdülhak Molla becoming the chief physician	
Dr Bernard's three reports to the Austrian government	18 June 1839	High fever, irritating cough, cough-related insomnia and weakness	Chief Physician Abdülhak Molla, Mac Carthy, Neuner, Konstantin Kara Todori, Stefanaki and Mahmud Efendi
	21 June 1839	Vomiting, severe cough with bloody sputum, associated insomnia, constipation, tachycardia, high fever, white blisters on the tongue and haematuria	Chief Physician Abdülhak Molla, Mac Carthy, Neuner, Konstantin Kara Todori, Stefanaki and Mahmud Efendi
	28 July 1839	Dr Bernard's interview with the Chief Physician Abdülhak Molla about the disease after the Sultan's death	
Deux Annees de l'Histoire d'Orient 1839-1840, written jointly by Ed. de Cadalvene and E. Barrault	1828	Severe influenza	-
	1837	Lumbago	-
	8 March 1839	Severe cough	Kara Todori
	14 June 1839	Bradycardia, discolouration of the tongue, loss of appetite, digestive disorders and constipation	Neuner
	16 June 1839	Deterioration in the patient's condition	Mac Carthy and Ansaldi
	23 June 1839	No changes in the patient's condition	Chief Physician Abdülhak Molla, Mac Carthy, Neuner, Konstantin Kara Todori
	27 June 1839	Millingen joins the consultation at the request of Esmâ Sultan	
	28 June 1839	The sultan is presumed dead and falls into a coma.	
	30 June 1839	Millingen gives the Sultan 24 hours to live	
Mac Carthy and Kara Todori's book	1835	Gout diagnosis	Mac Carthy and Kara Todori
	16 June 1839	Syncope	Mac Carthy, Etienne Kara Todori and Mahmud Efendi
	23 June 1839	Digestive distress	Mac Carthy and Kara Todori
	25 June 1839	Deterioration in the patient's condition	
	27 June 1839	Mac Carthy and Kara Todori are accompanied by Millingen	
	28 June 1839	Comatose state, Millingen diagnoses "delirium tremens"	
	1 July 1839	Sultan Mahmud passed away	

century, the survival rate was probably lower than today's conditions. In the report sent by Dr Bernard to the Austrian government, the fact that he stated in his interview with Chief Physician Abdülhak Molla that his disease had recurred in the last three years supports the diagnosis. Lung cancer patients show symptoms such as cough (75%), weight loss (68%), shortness of breath (60%), chest pain (49%), haemoptysis (bloody cough 35%), fever (20%), bone pain, vena cava superior syndrome (flushing of the face due to vascular compression), weakness, difficulty in swallowing [16]. The fact that Sultan Mahmud II showed symptoms such as cough, weight loss, body aches, intense fever and redness of the face in his last periods supports our opinion about the disease. Some of the cancer patients have problems with blood production. Anaemia is the most common. The change in the colour of the Sultan's tongue and his pale appearance in the following periods may be due to anaemia.

Cancer disease weakens the immune system, metastasises to other parts of the body (cancer spreading to other tissues) and predisposes to many diseases, especially infections. Neuner's diagnosis of pulmonary tuberculosis may have been due to a weakened immune system. The fact that he was said to be suffering from hepatitis and that haemorrhage from haemorrhoids occasionally became active suggests the possibility of metastasis to the liver, which produces bleeding factors. Bloody urination may also occur in renal failure or renal metastasis due to low fluid consumption, primarily in cancer patients.

As for Millingen's claim that the patient had *delirium tremens*, this claim does not meet current medical diagnostic criteria. However, alcohol withdrawal syndrome (AWS) does explain Sultan Mahmud II's experiences at the time. Chronic alcohol use can result in alcohol use disorder (AUD) and approximately 50 per cent of people with AUD may experience AWS when they reduce or stop alcohol consumption [17]. In addition, changing the drink and not being able to adjust the dose in the new drink may also lead to the emergence of withdrawal symptoms. Convulsions and *delirium tremens* (DT), which are life-threatening complications,

may occur in 3-5% of those who develop AWS [18]. Withdrawal symptoms are likely to occur if alcohol is abruptly discontinued after prolonged use of alcohol in large quantities (more than two weeks). Depending on individual differences, withdrawal symptoms begin 6 to 24 hours after the last alcohol intake.

Alcohol withdrawal affects the central nervous system, autonomic nervous system and cognitive functions [18]. After reduction or cessation of alcohol use, it is considered that the development of AWS occurs if two of the following symptoms are present: Autonomic hyperactivity (sweating, tachycardia); increased hand tremor, insomnia, nausea or vomiting, transient visual, tactile, auditory hallucinations or illusions; psychomotor agitation, anxiety, or tonic-clonic seizures. If AWS is not treated or not treated appropriately, DT may occur [18]. In the light of the above information, it can be concluded that Sultan Mahmud II did not have DT based on the findings stated in the documents and sources.

Conclusion

In the light of current medical knowledge, the above-mentioned information and documents about the sultan's illness suggest that Sultan Mahmud II suffered from "lung cancer" and "alcohol withdrawal syndrome". The fact that he showed problems in various parts of his body suggests that the disease had metastasised, and the deterioration of the Sultan in the last three years is consistent with the survival rate of lung cancer. Sepsis developing as a result of infection caused by this disease and deterioration of metabolite balances in the body can also be considered as the cause of death.

Funding

The authors received no financial support for the research.

Conflict of interest

The authors have no conflicts of interest to report.

References

1. Süreyyâ M. Sicill-i Osmanî. 1st ed. İstanbul: Matbaa-i Âmirî;1890.73-74 p.
2. Beydilli, K. (2023 August 13) Mahmud II, Diyanet İslam Ansiklopedisi. Retrieved from <https://islamansiklopedisi.org.tr/mahmud-ii-osmanli>
3. Özcan A. II. Mahmud'un reformları hakkında bazı gözlemler. Tarih İncelemeleri Dergisi. 1995;10:13-23.
4. Akyıldız A. Sultan II. Mahmud'un hastalığı ve ölümü. Türk Kültürü İncelemeleri Dergisi. 2001;4:49-84.
5. Şahin AY. Sultan II.Mahmud ve dönemi.İstanbul: Marmara Üniversitesi;2009
6. Dönmez, A. Karşılıklı Diplomasie Geçiş Sürecinde Osmanlı Daimi Elçiliklerinin Avrupa'da Yeniden Tesisi 1832-1841. , Konya:Selçuk Üniversitesi;2006. 26-32 p.
7. Cadalvene ED, Barrault E. Deux années de l'histoire d'Orient: 1839-1840: faisant suite à l'histoire de la guerre de Méhémed-Ali en Syrie et en Asie-Mineure. Paris:Delloye.1840. 1832-33 p.
8. Yanatma S. The Deaths and Funeral Ceremonies of Ottoman Sultans (from Sultan Mahmud II to Sultan Mehmed VI Vahideddin). 1 st ed. İstanbul: Boğaziçi University; 2007. 45-8.
9. Cumhurbaşkanlığı Osmanlı Arşivi (COA), HSD. AFT, (Ali Fuad Türkgeldi Evrakı), 9/26. (Hekimbaşının raporu)
10. Terzioğlu A. II. Mahmud'un son hastalığı ile ilgili raporlar ve Galatasaray Tıbbiyesi'nin 17 Şubat 1839'da açılışı.Tarih ve Toplum Dergisi. 1990;11(83): 38.
11. Cadalvene ED and Barrault E. Deux années de l'histoire d'Orient: 1839-1840: faisant suite à l'histoire de la guerre de Méhémed-Ali en Syrie et en Asie-Mineure. Paris:Delloye.1840. 287-96 p.
12. Mac Carthy JW and Caratheodory C. Relation Officielle de la Maladie et de la Mort du Sultan Mahmud II. 1 st ed. Paris. 1841. 1-18 p.
13. American Cancer Society.(2023, August 13) Cancer Facts and Figures 2023. Retrieved from <https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/2023-cancer-facts-figures.html>
14. Edwards BK, Brown ML, Wingo PA, Howe HL, Ward E, Ries LA, Schrag D, et al. Annual report to the nation on the status of cancer, 1975-2002, featuring population-based trends in cancer treatment. J Natl Cancer Inst. 2005;97(19):1407-27. doi: 10.1093/jnci/dji289.
15. Surveillance Research Program, National Cancer Institute: SEER*Explorer: An interactive website for SEER cancer statistics. Bethesda, MD: National Cancer Institute. (2023, August 13). Retrieved from <https://seer.cancer.gov/statistics-network/explorer/>.
16. Hyde L, Hyde CI. Clinical manifestations of lung cancer. Chest. 1974;65(3):299-306. doi: 10.1378/chest.65.3.299.
17. Caputo F, Agabio R, Vignoli T, Patussi V, Fanucchi T, Cimarosti P, et al. Diagnosis and treatment of acute alcohol intoxication and alcohol withdrawal syndrome: position paper of the Italian Society on Alcohol. Intern Emerg Med. 2019;14(1):143-160. doi: 10.1007/s11739-018-1933-8. Epub 2018 Sep 5. PMID: 30187438.
18. Umut G, Evren C. Alkol yoksunluğu ve deliryum tremens tedavi. Alkol ve Madde Kullanım Bozuklukları Temel Başvuru Kitabı. 1 st ed. Ankara:Türkiye Psikiyatri Derneği Yayınları;2019. 11-7 p

Appendices

Incomplete Report of Chief Physician Abdulhak Molla on II. Mahmud's Illness

(Transcript of Assoc. Dr. Raşit GÜNDOĞDU)

Sultân Mahmûd'un zuhûr ve iştidâd-ı marazına dâ'ir Hekîmbaşî Abdülhak Efendi'nin hatt-ı destiyle muharrer nâ-tamâm makâledir.

(Mizâc-ı Velîni'met Mahmûd Han Efendimiz)

“Hayli müddet iş ü işret ile me'lûf olup sûi'l-kınye gibi hâzim-i hazm (هضم حضم) ve aralık aralık kay dahi vâki' olmuş iken ketm ederek takarrür etmiş ve kay' vâki' olup nûş olunan ervâh mi'deden çıkarıldığı an yine rûh ve ba'dehû hamr ile mi'de imlâ olunup yine kay gelirse minvâl-i mezkûr üzere yine nûş olunarak hazm za'îf olup ri'ede dahi haffıce bir iltihâb ile suâl olmuş idi. Bu kalîlü'l-bizâ'a hekîmbaşılıktan azlolunup nâ-halef birisi hekîmbaşî olmuş ise de mizâc-ı şâhâneye aslâ müdâhale etmeyip resmî hekîmbaşî olmuş ve iki yüz elli dört senesi Şevvâl-i şerîfinde yine iltihâb-ı ri'e ile bir öksürük vâki' olup ziyade iz'âc ve işret olundukça öksürük dahi müştedd olup çâr ü nâ-çâr işret külliyyen terk olunmuş ve yirmisine kadar ilâc olunmayıp ketm olunmuş ise de bazıları “süt içmek nâfi'dir” deyu ta'rîf etmeleriyle birkaç gün ham süt isti'mâl olunup çend gün sonra süt tezyîd olunup basura dokunmuş olmağla amel verip on gün kadar amel müştedd olarak kan dahi gelmiş ise de ketm olunup Sarây-ı Hümâyûna memûr Edirneli Kostantin celb ve mu'âleceye şurû' olunmuş sütü kat' edip birkaç gün mu'âlece olunarak öksürüğe hiffet gelmiş on gün

kadar perhîz olunup iştiâ külliye sâkit olmağla arak nûş olmayarak işrete mübâşeret olunmuş yine evvelki usûl üzere muâmele olunarak ilâcdan kesilip iştiâ munkat' olarak işrete devam olunmuş, süttten olan ishâl mümtedd olup külli za'f gelmiş ve derecesiz iştiâ kat' olup lisan pas ve öksürük dahi irin ile beraber olup ri'ede yara olmak ihtimâli isbât olmuş, bu hal ile Zilhicceden sonra yine işret kat' olunup za'f ziyâde olmakta olarak Muharrem ve Safer geçip Rebülevvelde hekîmbaşî olmak nasip oldu. Efendimizi gördüğümde ziyade hüzzâl gelip dilinde ziyâde pas ve iştiâ kat' olunmuş ve karnında harâret ve karaciğerde salâbet ve veca' ve mi'dede veca' ve hummâ-yı dikiyye (حمای دقيه) ile hafifçe sıtma ve öksürük ve balgam ile beraber kış var idi. Demli basur dahi olduğu sonradan keşfolunmayıp mektûm imiş. Mi'dede olan ufûnet-i redîe def' olunmak için keten tohumu lu'âbî verilip onuncu günü sekiz dirhem bâde ale's-sabah ve on iki dirhem bâde öylede on sekiz dirhem bâde ahşamda verilip mi'denin za'fı bununla def' olup oldukça iştiâ gelmiş idi. Ancak tabîb olacak hâin bâdenin kesreti olur da yine evvelki gibi olup deyü men' etmişler. Muhâlefet edemeyip gizlice "Hekîmbaşî Efendi bak ne diyor" diye etrafa işâ'a edip bâdeden istikrâh ettim. "İçemem" buyurdular, gerçek zanneyledim. Her ne hal ise birkaç gün içilip mi'de yoluna girmiş olmağla tabîb "işte ufûnet gitti, hemen perhîz olmak lâzımdır" deyip birkaç gün bu hal üzere gidip çubuk içmek niyet olunmağla Çamlıca'ya nakle karar verildi idi. Nakl-i hümâyûn olup mizâc-ı şâhâne oldukça yolunda iken Kapudan Paşanın hareket edeceği musammem ve zâiçesi dahi yapılmış olmağla hava be-gâyet bozuk ve yağmurlu ve bayağı kış havası gibi iken sefîneye gitmeğe niyet ettiler. Her ne hal ise men' olunup gemi vakt-i muhtârda hareket edip ol gün Sâliha Sultan haz-retleri dahi nâ-mizâc olmağla beni istifsâr-ı hâtır için irsâl ettiler. Ben Sâliha Sultanda iken hemen mâbeyn-i hümâyûndan hareket buyurup ol murdâr havada zevrak-süvâr olarak teşrîf etmişler. Ben dahi Sâliha Sultandan hareket ve Nâfiz Paşa hazretlerini ziyârete gidip Müneccimbaşî Efendi'yi Nâfiz Paşa'da bulup "gemi hareket etti, ancak ba'de'l-hareke efendimiz teşrîf etti" dedi. Her ne kadar münâsib değil ise de ne çâre teşrîf olunmuş, "Allah hayırlı eyleye" dedim. Hemen kahve içerken Mahmûdiye'den bir başka çifte kayık ile bir hademe gelip "Mahmûdiye'den taleb buyurdular" deyü Nâfiz Paşa'dan hareket edip sefîneye gittim idi. Gördüm ki hava fenâ teşrîf etmişler, ne çâre hayrola deyip hayret el verdi. Sefineden sâat onda hareket olunup yağmur yağarak teşrîf ettiler. Ama nezle yeniden nüksedip öksürük ziyâde ve harâret gelip bayağı hasta oldular idi. Ol gece müstedd olup harâret ve lisânda pas, adem-i iştiâ ve öksürük ve balgam yerine yine irin gelip dem-i basur dahi ziyade olup yeniden evvelki za'fın üzerine bir kat daha ziyâde

oldu. Bir iki gün sabrolunup hamâma girdiler. Ertesi gün bu hal ile bend-i cedîde teşrîf olunup yolda iki defa bayılıp bir kere dahi bendde bayıldı. Ne hal ise avdet olunup bin belâ ile Çırağan'a teşrîf ve ondan sahil-saraya gelindi. İlet bir kat daha müstedd olup artık yatmağa başladılar. Ertesi gün Hüsrev Paşa hazretlerinin câmiine gitmek niyet olunup gitmek bir vechile câiz olmadığından bin belâ ile Kuleli Câmiine, ondan dahi bir hareket ile Çamlıca'ya teşrîf ettiler. Zira ertesi günü Tersâne'de gemi nüzûl olacak imiş. Ona dahi teşrîf ederek ertesi Çamlıca'ya çıkacak idi. Bir hareket-i Cuma ile Çamlıca'ya teşrîf olunup illet dahi ziyâde olmağla bir çare bulunmaz derecede iken ertesi Cuma günü câmie gidilip hemen ye's-i tâmm geldi. Câmiden teşrîf olunup bir gün kadar sabrolunup döşekten çıkmadılar. Ertesi Cuma günü be-gâyet ağırlaşmış hemen hâlet-i nez' derecesine girip Cumayı kılmağa tâkat kalmayıp Çamlıca'da köşkün havlısına minber ve mihrâb vaz' olunup namazı edâ edemediler. Hemen melek hükmüne girip boğazından su dahi nüfûz etmeyip"