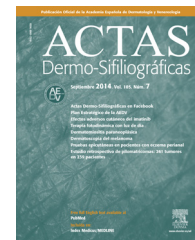




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HISTORY AND HUMANITIES IN DERMATOLOGY

Syphilis and Human Experimentation From the First Appearance of the Disease to World War II: A Historical Perspective and Reflections on Ethics[☆]



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Abstract Physicians have conducted research on syphilis for centuries, seeking to understand its etiology and the means of transmission as well as find ways to prevent and cure the disease. Their research practices often strayed from today's ethical standards. In this paper we review ethical aspects of the long history of research on syphilis with emphasis on the experiments performed in the 20th century. The description of research around the time of World War II covers medical experiments carried out in US prisons and in the experimentation centers established by Japanese doctors in occupied territory, as well as experiments in Nazi Germany and the treatment of syphilitics there.

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PALABRAS CLAVE

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Experimentación en sífilis hasta la Segunda Guerra Mundial: historia y reflexiones éticas

Resumen Durante siglos la sífilis ha sido objeto de investigación por parte de los médicos, dado que la etiología, la forma de contagio, la profilaxis y el tratamiento eran desconocidos. En muchas ocasiones las investigaciones se han alejado de los estándares éticos actuales. En este artículo hemos revisado desde un punto de vista histórico y ético las investigaciones que sobre esta enfermedad se han ido realizando a lo largo de los siglos, centrándonos sobre todo en aquellos experimentos realizados en el siglo xx. Describimos con detalle los estudios realizados en los años que tuvieron lugar alrededor de la Segunda Guerra Mundial: experimentos realizados por los médicos norteamericanos en prisiones de Estados Unidos, la sífilis en la Alemania nazi o

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los ensayos realizados por los japoneses en centros de experimentación creados a tal fin en los territorios ocupados.

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Introduction to the History of Syphilis

The first cases of syphilis in Europe were detected toward the end of the 15th century. The physician Ruy Díaz de Isla claimed to have first seen the disease in Barcelona in 1493 and he surmised that the crew who traveled with Columbus had brought it back from the Caribbean. At a time when no known cure was at hand, syphilis spread across the world and the manner of transmission associated it with social disgrace. With the emergence of venereology in the 19th century, many scientists began to look further into the means of contagion and possible treatments, and in some cases their experiments were clearly improper when viewed in the light of today's ethical standards. In this article we will review the best known studies and their repercussions.

Experiments Involving Self-Inoculation or Inoculation of Patients

In attempting to confirm theories about the etiology of syphilis, some physicians resorted to self-inoculation. In 1767 the surgeon John Hunter apparently inoculated himself with secretions from a patient's urethra in an experiment intended to shed light on the relative merits of the "unicist" and "dualist" theories of sexually transmitted diseases (STDs).¹ Once syphilis was understood to be sexually transmitted, venereologists could address the question of whether or not it could be distinguished from another STD: the blennorrhagia of gonorrhoea. Defenders of the unicist theory hypothesized a single venereal disease that caused all symptoms. Dualists, on the other hand, argued that various STDs were at work. In 1812 in Toulon, Jean-François Hernández managed to confirm the dualist hypothesis when he inoculated 17 prison inmates with gonorrhoeal pus only and saw that syphilis did not develop.¹ The literature records similar experiments by 2 others. One was William Wallace, who infected healthy subjects with syphilis. Another was Joseph-Alexandre Auzias-Turenne, who practiced syphilization, a procedure in which the patient was inoculated with syphilitic material with the intention of inducing a curative response. Auzias-Turenne infected prostitutes held at the Saint Lazare prison.² At this time—the middle of the 19th century—syphilization was being hotly debated by respected physicians such as Joseph-François Malgaigne, who defended the practice, and Philippe Ricord, who opposed it. Similarly respected physicians in Spain, such as Matías Nieto y Serrano, were radically opposed to Auzias-Tourenne's method, arguing that there was no evidence that it provided any benefits, whereas it did lead to complications and worsening of the disease in certain patients. Syphilization was even discussed in doctoral theses, such as one completed in 1877 in Nuevo León in Mexico by Evaristo Sepúlveda.³

The conviction that syphilis was caused by a still unidentified microorganism was widespread by the early years of the 19th century. In a talk on dermatology at a Spanish medical conference in Madrid in 1864, dermatologist José Eugenio Olavide spent some time discussing the case for syphilis as a contagious, infectious disease.⁴

Twentieth-Century Experiments

Doubts about the distinct natures of the various STDs were dispelled by the end of the 19th century thanks to the contributions of bacteriology, which helped to clarify the etiology of individual clinical entities.⁵

In 1905 in Berlin, Fritz Schaudinn and Erich Hoffman discovered the causative agent of syphilis by means of dark-field microscopy. The name they gave the pathogen, *Treponema pallidum*, was a reference to the pale staining they observed. The Bordet-Wassermann reaction for diagnosing syphilis was described in 1906. Other serology techniques introduced later were the Meinike reaction (1917), the US Venereal Disease Research Laboratory (VDRL) test (1941), the Nelson-Mayer test (1949), and the fluorescent treponemal antibody absorption test.

Alexander Fleming discovered penicillin in 1928, and by the 1930s it was being used to treat humans. Only a decade later, during World War II, improvements in the manufacture of penicillin made it available in larger quantities for wider use.

The 2 world wars in the first half of the 20th century led to large-scale movements of troops and civilians. Military authorities understood that STDs were epidemic among soldiers and prevention, diagnosis, and treatment were high priorities. The pathogen had been identified, several serologic tests were available, and penicillin had been discovered: this combination created the basis for carrying out the studies of transmission, diagnosis, and treatment that will be discussed below.

Syphilis in Germany and Under the Nazis: Sterilization, Euthanasia, and Experimentation

In 1898, Albert Neisser carried out experiments on German prostitutes, who he injected with serum from patients with syphilis in an attempt to develop an antisiphilitic serum therapy.⁶ Most of the women contracted the disease, which Neisser attributed to their prostitution rather than the injected serum.⁷ Under pressure from public opinion once the experiment became known, the German Health Ministry issued a directive in 1900 to formally recognize the rights of individuals involved in scientific experiments.

Neisser then traveled to Java between 1905 and 1907 to conduct tests on the etiology, course, and treatment of

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