

**Research Article**

## **Medicine and Humankind in an Ancient Times: Historical and Legal Aspects of Joint Development**

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### **ANNOTATION:**

History of the formation of medicine and the history of human development have a common centuries-old past. In this article, on the basis of our solid and deep study, we highlighted the historical and legal foundations of the development of medicine and humankind. We began our research from the very prehistoric times (the time of the Neanderthals, who lived about 350-35 thousand years ago), thus, since the birth of mankind. Based on the analysis of the results of archaeological, anthropological studies and historical sources, we legally proved that starting with the very early stages of human development, medicine existed alongside the primitive man.

Humanity developed, and also developed medicine. We have adequately researched the ancient Egyptian medicine, which is the oldest of officially documented medical systems, which existed from the XXXIII century BC to 525 BC. It was the most advanced for its time and even included simple non-invasive surgery, treatments for fractures and a large set of pharmacopeia. Ancient Egyptian medicine has influenced many of the following medical systems of the Ancient World, including Greek one.

While investigating the state of medicine in ancient Egypt, we came to the conclusion that treatment not only helped people, but sometimes, on the contrary, greatly damaged the health of patients. For example, many recipes included the obligatory use of manure, which contains products of fermentation and mold, which is very dangerous to the body and health. However, despite these negative results, we can argue that medical practice in ancient Egypt was well developed. The Egyptians understood that the disease should be treated with pharmaceutical drugs, and sometimes also with surgical intervention. The studies of this period made it possible to conclude that medicine develops in an inextricable connection with human development, and the obtained medical knowledge is used by society for its well-being.

The study of the development of medicine and humanity in Ancient India gives grounds for arguing that due to advanced medical education, society has come to the conclusion that medicine is an integral part of human life and a guarantee of its development and continuation. It was during this period that humankind switched to a new stage of healthcare, when the state control of medicine emerges. It was in India where state institutions began to consider the medical sector as one of the main tools for the guaranteeing of the well-being of citizens. And in ancient China, medicine gained state support and became the foundation of the society's development at the one level with religion. Medical education has received a tremendous boost up.

The knowledge given to world medicine by the doctors of Ancient Greece, headed by Hippocrates, became the basis of all modern practical medicine.

The results obtained in the course of our study are based on historical facts, they prove that medicine arose with the appearance of human and subsequently existed and developed along with human development.

**Keywords:** history, humanity, medicine, medical activities, medical education.

## INTRODUCTION

The history of medicine and the history of humankind development has a long history of establishment. Currently, there are many scientific discussions about the fact that medicine began to originate in Ancient Greece. Some scholars point out that it first appeared in ancient Egypt, but scientists did not come to a common consensus. That is why the topic of our study, as well as the very issue of the origin and development of medicine in ancient times, is relevant and requires a detailed study.

The purpose of our research is to establish the timing of the birth of medicine, the stages of development and the establishment of legal facts of its existence in ancient times, as well as to prove the validity of the theory that mankind and medicine could not exist separately from each other.

## MATERIALS AND METHODS

In our research, we have used reliable and scientifically proven historical and anthropological facts and archaeological monuments we received in various ways. Much attention was paid to the study of myths, legends and historical writings that were discovered by scholars in various ancient temples.

An overview of the literature was conducted using browser methods in international databases (we have worked out national and foreign articles, scientific papers, textbooks, etc.).

## MAIN PART

Medicine is one of the most ancient components of the existence of mankind, which has passed the parallel path with the development of mankind and has accumulated invaluable practical experience. Therefore, it is interesting for the further development of medicine to study this experience and the mechanism of its accumulation through the prism of history. In our

study, we tried to investigate the historical basis of the emergence of medical care not since the discovery of the first written evidence, as it is usually done by other researchers, but since the very origin of humanity, based on the results of the research of anthropologists and archaeologists, given into account the fact that anthropological data have an advantage before other ethnogenetic sources (archaeological, ethnographic, linguistic), since language and culture can be disseminated through borrowing while anthropological features play the role of “biological markers”. These markers store their information, including remote historical epochs, because of the conservatism of the hereditary features of humanity [1].

The natural sources of knowledge in our research are the remains of the primitive man which give us information about whether the primitive people were ill, what illnesses they had, what caused them to die and whether they received any medical assistance or not, and if received – what kind of?

Scientists discovered the first ritual burials in the culture of Neanderthals, who lived about 350-35 thousand years ago. Neanderthals were genetically very similar to the modern human species and could have a common reproductive offspring. For several millennia, Neanderthals and modern type people existed in parallel and most likely lived and married to each other (at present most people now have genes of the Neanderthals, except Negroids), about 35,000 years ago Neanderthals died out for unknown reasons.

One of the first evidence of the availability of medicine in primitive people's life is the findings in the Shanidar cave in Iraq. In the 1960s nine skeletons of Neanderthals were found, and they had unexplained imprints of unexplained severe pathologies – traces of illnesses and injuries. Studies of anthropologists

have shown that people with such ailments could not survive on their own, so it can be argued that other Neanderthals helped them to live. The bodies were laid on a bed made with branches of trees and decorated with bouquets and ligaments of healing plants, among which are yarrow, althaea, water lilies, ephedra and mallow. The presence of such plants makes it possible to assert their use as a drugs and to emphasize the presence of primitive medicine in the settlements of Neanderthals. The proof of this is the study of the most notable of the detected skeletons, which was named "Elder from Shanidar". This is a man aged 40 to 50, who lived most of his life with a disabled person. As the results of the anthropologist's research show, his right arm was amputated till the shoulder in his early adolescence; he was blind in left eye, since there was damage to the lateral paries of the left orbital cavern, besides, the "elder" suffered from arthritis. With such weaknesses it is difficult to live without external medical care even in the modern world, and this Neanderthal survived to an old age about 35 thousand years ago. Therefore, in our opinion, he was able to live such a long life due to the the care of the tribesmen and the use of primitive medicines and knowledge.

One of the methods of studying primitiveness is the observation of the peoples who were at the stage of the primitive communal system - the aborigines of Africa, Oceania, Australia, South America, as well as Siberia and the Far North of Russia. Such studies have shown that these peoples widely used the medicinal properties of plants and minerals, were able to stop the hemorrhage with the help of improvised means (web, ash, fat), suck poison in the case of the bite of the poisonous snake, cauterize wounds, apply a bandages and compresses, made bloodletting. Most likely, all these skills were owned by the primitive man too, although in the scientific environment there is a discussion about the lawfulness of the distribution of data obtained from observation of modern aborigines at a much earlier age.

The poor conditions of the existence of a prehistoric man caused a lot of serious diseases that led to premature death. The results of

anthropological studies have shown that the main diseases that occurred in the life of primitive man were: stomach upset during meals, skin diseases, infectious diseases, injuries, wounds and fractures obtained in hunting or in combat. Especially frequent were bone diseases, mainly arthritis of the limbs.

A primitive man very often suffered from toothache and various ailments that damage teeth. As a result of eating rough and poorly cooked food, teeth were worn and deformed. Such a state of teeth is seen not only in Europe, but also in America on tortoises belonging to different periods (the Paleolithic, the Neolithic and the Bronze Age). Even 12-year-old primitive men had the destruction of the chewing surface of the teeth. In connection with tooth diseases, jaw suffering is common: inflammation of the periosteum and jaw enlargement are common. From the state of teeth, we can make an idea of how often primitive people suffered from toothache. It should also be noted that the condition of women's teeth was negatively affected by frequent pregnancies – as the formation of the fetus requires calcium, so often the mother's body suffers from a lack of vitamins and minerals, especially if her nutrition is already inadequate, which leads to body depletion and the gradual destruction of teeth.

As the medicine at that time was primitive and almost not developed, the only treatment that primitive man could receive was the procedure for tooth extraction. The anaesthetics were plants with anaesthetizing effect, often even narcotic ones.

Without a fundamental idea of the causes of most diseases, the primitive man still had some practical skills that provided a longer life. Ancient hunters often received injuries during hunting, namely wounds from the canines and claws of wild animals, dislocations and fractures from falls, etc. Scientists have found on some of the found skeletons traces of correctly cured fractures, which testify that primitive people were well able to handle fractures and apply a splint, most likely, made from clay.

Thanks to the finds of anthropologists, we know the so-called “primitive trepanations” that are found among the primitive people who inhabited the Earth about 12 thousand years ago. The first trephined skull of the primitive man was found in Latin America – in the city of Cusco in Peru in 1865. Till nowadays many skulls with traces of trepanations from all regions of the globe have been discovered. Holes are found in different shapes and sizes, often round, but there are rectangular or triangular ones as well; there are also skulls with several holes. Often, a single small hole of round shape was made – in this case the human being undergoing surgery had the greatest chance of survival. Complete healing of the trepanation hole is characterized by the presence of a locking plate that covers the spongy material. After a successful trepanation, traces of cracking, periostitis, osteomyelitis were not detected. The lifetime of the operated people in the event of a successful course of the operation was not less than 2-3 years, but could reach 10-15 years (which is significant given the low average life expectancy of people in the Stone Age). Analysis of numerous trepanations of human skulls in Peru has shown that the percentage of survival after such operations was 70%.

Thus, summarizing, we see that medicine at the very earliest stages of human development already existed alongside the primitive man. However, the treatment was of a primitive nature, namely: rubbing and kneading of sick places; cessation of bleeding by clamping; handle of fractures and applying a splint; attaching to the damaged places of a branch or a piece of tree bark, while healing means were medicinal herbs: causing diarrhea, vomit; solar heat, water and other substances.

Humanity has developed and together with it developed medicine. Thus, one of the most striking examples of this is ancient Egyptian medicine, the most ancient medical systems among others documented by archaeologists. It existed from the XXXIII century BC until the Persian invasion in 525 BC and was advanced for its time and included simple non-invasive surgery, treatments for fractures and a large set of pharmacopeia. Ancient Egyptian medicine has

influenced many of the following medical systems of the Ancient World, including Greek one.

The main source of information about ancient Egyptian medical knowledge for a long time was the message of Greek authors, but the decipherment of ancient Egyptian hieroglyphics in 1822 allowed reading texts on papyrus concerning the medicine of Ancient Egypt.

Sources allow us to establish that the Egyptians suffered from a variety of diseases and described them meticulously, tried to find out the treatment for every disease, but illness with implicit symptoms represented a kind of riddle for them. There are hundreds of different diseases and methods of treatment mentioned in medical papyrus [2] [3]. It is the presence of these descriptions of illnesses that allows us to state that they are the first ancient prototypes of modern clinical records that modern doctors conduct about their patients, as well as to state the existence of an appropriate legal framework regulating the conduct of these records. It was medical papyrus that became the most significant for historical research as documents having a certain form and containing relevant medical, social and legal information.

Papyrus from Ramesseum [4] (1850 BC) – two papyrus written in hieroglyphic writing, and not hieratic one like most medical papyrus. The first papyrus is a medico-magic containing recipes related to childbirth, newborn care, and the prognosis of his / her viability. There is one recipe for preventing impregnation using excrements of the crocodile. The second one is purely medical, the text is partially lost. The preserved part contains 20 recipes, mostly for healing the disease called “inflexibility of limbs”.

Thus, Kahun Papyrus [5] (1850 – 1800 BC) consists of three parts devoted to medicine, veterinary science and mathematics. The first papyrus consists of three sheets with a medical text on the topic of gynecology, and lists 17 diagnoses of female diseases, 17 symptoms of pregnancy, recipes for conception, contraception or prescriptions for the treatment of hysteria.

Edwin Smith Papyrus [6] (1550 BC) contains rational methods of treatment, examines 48

types of injuries, gives recommendations for their treatment and a prognosis for recovery.

Ebers Papyrus [7] (1550 BC) is devoted to issues of private pathology, it describes 250 diseases, 877 methods of treatment, and 900 prescriptions of medicines.

Bruch's Papyrus [8] (1400 BC) is a treatise on infantile diseases, in fact the first known treatise on pediatrics, although the medical component is almost lost among the mystical part.

Hirst Papyrus [9] (Upper Egypt) describes recipes for empirical treatment. It describes 260 cases of diseases, 96 of which are mentioned in the Ebers papyrus, there is a chapter on bone disease, treatment of fractures of the limbs and precautions for bites with poisonous insects.

The London papyrus [10] focuses on magical treatments. However, there are also rational recipes – such as the application for the treatment of night blindness with the help of the bovine liver containing vitamin A, the treatment of gastric diseases using castor oil. 25 prescriptions out of 61 relate to treatment.

Leiden papyrus [10] presents recipes and describes techniques of magical and empirical treatment, similar to those that are presented in other papyrus.

Doctors in ancient Egypt were called priests. Herodotus wrote that their specialization was different: “each doctor deals with a special kind of illness: some of them are doctors who treat eyes, others – doctors for the head, the third – for teeth, and others – for invisible illnesses” [2] and there was also a special manufacturer of medicines. The doctors of Ancient Egypt had a good reputation, so the rulers of other empires even asked Pharaoh to send doctors to them to treat their relatives.

The most famous doctors in Egypt were Imhotep [11], Merit the Bird, Peseshet (the first women doctors) [12] and Hesy-Ra [13] – they remained in history. However, it should be borne in mind that the sources for such an ancient era rarely are absolutely reliable. The circumstances of the life and activities of these people are surrounded by legends, later additions and distortions.

Treatment in ancient Egypt was a synthesis of magic and therapy. As a rule, they were used together according to the principle: “The magic

acts with the drug, the drug is effective together with magic” [14]. But at the same time, there are also sources in which the role of magic and spell is seen as decisive, effective by itself.

Magical methods of influence included exorcism – the exile of “demons” that caused the disease from the body of the patient. The diagnosis consisted in the using the symptoms to establish which demon is hiding in the body of the patient, and then to expel this demon with the use of spells and medicines. The Egyptians used for the treatment almost all the materials and components known to them: starting from the most trivial (honey, milk, butter, vegetable and animal fats, herbs, clay, soda, etc.) to more than the exotic particles of “heavenly iron”, a meteorite – the most expensive material in ancient Egypt.

Many medical practices were effective, but there were ineffective or even dangerous practices as well – for example, a fairly large number of drugs prescription contained manure, which includes fermentation and mildew products. Although some of them have healing properties, but there are plenty of bacteria in it that cause quite serious threat of infection.

The Egyptians practiced embalming, in which the internal organs of the corpse are pulled out and placed separately, so it is possible to assume that the Egyptians approximately had the idea of the anatomical structure of the human, but did not know the functions of each organ. For example, the organ of thought and, in general, the most important organ of the person was considered the heart as the only organ that is tangibly responsive to what is happening. Egyptian doctors were aware of the existence of pulse and the connection between the pulse and heart. The author of “Edwin Smith Papyrus” [6] even had a vague idea of the cardiovascular system, although he did not know about blood circulation, and he could not or did not consider it important to distinguish between tendons, blood vessels and nerves. The ancient Egyptians developed their own theory of “channels” that carried blood, water and air into the body by analogy with the river Nile. If they are blocked, the fields will become unhealthy and they apply this principle to the body: if a

person was ill, then you need to use laxatives to unlock the “channels”.

In ancient Egypt, surgery was a common practice among physicians for the treatment of bodily injuries. Egyptian doctors recognized three categories of injuries: those undergoing treatment, controversial and incurable diseases. Surgeons operated curable diseases quickly. Disputed or controversial illnesses were those in which the patient was likely to live without treatment, so the patients included in this category were supervised by doctors, and if their illness persisted, then surgical attempts were made to cure it. Surgical instruments found in archaeological sites include knives, hooks, drills, tweezers, scales, spoons, saws and vase with incense. Prosthetics in the form of artificial fingers or eyes existed, but it has more decorative than a practical effect [15].

There also was the dentistry, but it was at a rather low level of development. The condition of the teeth of most Egyptians was bad due to too coarse grain grinding. Dental diseases could even be the cause of death. A diseased tooth, as a rule, was removed, and opium was used for analgesia [15].

Thus, the results of archaeological research prove that medical practice in ancient Egypt was sufficiently developed. Knowledge about the illnesses of the priests proves that they carried out constant observations and experiments of patients with regard to the mechanisms of treatment. It can be argued that the Egyptians were well aware that the disease should be treated with pharmaceutical drugs, and if necessary, the surgical intervention should be carried out. They used various techniques of therapeutic massage and aromatherapy, as well as a very important value was the cleanliness in the treatment of patients. The Egyptians understood very well how to treat injuries, but it was difficult for them to carry out a diagnosis of an illness which was not related to an injury. Therefore, quite often the disease was associated with the sin of the patient, respectively they treated it with various magic spells. The study of this historical period of the development of mankind proves that medicine develops together with human, and the

knowledge gained during the evolution is used for human benefit [16].

Most scholars are conducting a variety of studies convincing society that medicine has its origins and development in Ancient Greece. We categorically disagree with this opinion. The proof of this is the above described results of anthropological and archaeological research found during the excavations of the scribes of primitive people and ancient Egyptians. Another proof of the falsehood of such a theory of the development of medicine is the medicine of Ancient India. In accordance with the Hindu myths, the founders of Indian medicine were the gods Shiva and Dhanvantari. Modern archaeologists have learned about the medical knowledge of ancient Hindus from the sacred hymns (Vedas), which date from the IX century BC.

The peculiarity of India's medicine was the well-developed surgery, which was called shali. Indian surgeons skillfully operated and carved a stone from the bladder, removed cataracts, pierced the chest, etc. If there were fractures – tight bandages were usually imposed. Bleeding was stopped by cauterization. The wounds were dressed properly. Particular attention is drawn to the fact that in India they began to do one of the first plastic operations – the restoration of missing nose or ear.

The doctors of Ancient India were pretty well-versed in medicine. The number of medicines mentioned by ancient Indian authors is enormous. Thus, the writings of the Indian physician, the author of the earliest Indian medical treatise, the founder of the Indian School of Medicine Suhruth [17] describe the properties of 760 herbal remedies, and provide accurate guidance on the choice of time of harvesting, ways of preserving and preparing them for medical purposes. Also, different parts of plants and animals were used for drugs. Many substances were used such as mercury, gold, silver, copper, nitrate, soda, and others. The Hindus sought such a connection that could make a man young and immortal.

Ancient Indian documents contain very detailed instructions on how a pregnant woman should behave, it is mentioned that the delivery of the

babysould be taken by four experienced women in the presence of a doctor who, if necessary, carries out an operation in the case of the wrong placement of the fetus, as well as it they contain detailed advice on how to feed a baby and treat newborns.

Manuscripts that specify the mechanisms of patient examination, the features of many diseases (fever, rash, rheumatism, nervous and mental illness), diagnosis and treatment procedures for diagnosed diseases are written by Indian doctors for the diagnosis of internal disease. This proves to us the presence in hands of Indian doctors who lived 5 thousand to 2 thousand years BC of the prototypes of modern patient examination protocols, diagnostics of the disease and methods of treating a particular illness.

Modern archaeological research has proved a well-developed system of medical education in Ancient India, the quality of which was controlled by the state. The teaching of medicine was carried out by the most experienced physicians – the brahmins, who were called the gurus. It consisted of reading sacred books, explaining them, studying drugs, indicative treatment of patients (medical practice). Also, for refresher education students traveled with a teacher and watched how another gurus treats. Having received medical education, the young person received a permission from the raja personally for the right to heal. At the same time, the doctor gave a promise to dress cleanly, to cut off a beard and nails, to speak softly, without sharpening, to come to the patient at the first demand, to treat the brahmins for free and not to take on the treatment of incurable illnesses that cause suffering. Along with the educated doctors there were witch doctors. Being invited to the patient, the doctor carefully investigated which part of the body aches and prescribed the medicine only when he was finally convinced of the nature of the disease.

The presence of an advanced medical education system in Ancient India makes it possible to assert that during this period of development of our civilization the society came to the conclusion that medicine is an integral part of human life and a guarantee of its extension. The

presence of medical education proves that humanity has moved to a higher level of health care, and state institutions have begun to consider the medical sector as one of the main tools for ensuring the well-being of citizens.

Even further was the development of medicine made by the doctors of Ancient China. Legends and chronicles that have survived to this day prove that medicine in China arose 3 thousand years BC. The mythical emperor Shen Nun [18], who used all sorts of herbs for treatment, is considered to be one of the first Chinese doctors. He was first to make a written description of the action of 70 types of poisons and antidotes to them. He is believed to be the author of the world's oldest "Canon of the Roots and Herbs", [19] which described the action of 365 medicinal plants.

According to archaeological research 3 thousand years BC Chinese medicine has distinguished four main areas: internal medicine, surgery, diet and veterinary medicine. Archaeological research has proved that in 2698-2599 BC there was a book on medicine "Nei-Jing" in China, the most famous ancient medicine book, the author of which is considered to be emperor Huang Di [20].

He is also considered to be the author of the first medical code "Nutsi-King" [21], which was issued in 2657 BC. The code clearly indicates the place and role of medicine in the development of mankind: "Medicine can not save from death, but is able to prolong life, to strengthen morality, encouraging integrity, persecuting the defect – this deadly enemy of health – can cure many ailments, affecting the poor mankind, and making the state and people stronger with its advice" [22].

Despite the widespread belief, medicine in ancient China was not represented only by unsupported facts, based only on myths and religion. The study of artifacts proves that the Chinese had good knowledge of human blood circulation, and most importantly during the diagnosis was the definition of the pulse of the patient, which was measured at 11 different points. 200 varieties of the pulse are described in available archaeological sites, and 26 of them indicate a rapid death.

Chinese doctors prescribed the appointment like modern recipe to treat the patient. To this day, about 2000 such ancient recipes have been preserved, and some of them are used even nowadays. Thus, the drug ephedrine in ancient China was used to treat allergies, in the case of anemia iron salts were prescribed, Chinese doctors treated syphilis with the help of mercury, sodium sulfate was used as laxative, while opium was used as a drug. Among the doctors of ancient China, Bian Cuo, as the author of the famous "Treatise about Diseases", is especially distinguished [21]. Thanks to the deep-humanist orientation of his scientific works and his clinical observation of the patients of this prominent Chinese doctor, he is fairly considered to be Chinese Hippocrates, while modern physicians recognize him as the author of the doctrine of pulse.

Another Chinese doctor Tsang Gung [23] is the first in the history of medicine who officially began to record the course of the disease of the patients under study, indicating in the relevant registers the date of the review, changes in the symptoms of the patient, the appointment of treatment and its results. In other words, 500 years BC Chinese doctors used and conducted a modern clinic record for treating patients.

Anthropological studies of archaeological findings prove that in the V century BC Chinese doctors have already performed surgical procedures using anesthesia and adherence to antiseptics. To prevent infection by helminths, well-known procedures in modern society were carried out, for example, washing hands before eating. The first smallpox vaccines were also held in China a thousand years before our era. The inoculation of the contents of the smallpox pustules to healthy people in order to protect them against the acute form of the disease then spread to other countries (India, Japan, Turkey, Byzantium, the countries of Asia Minor, and Europe). However, variolation has not always been successful – there is evidence of the beginning of the acute form of the disease and even of the fatal outcome. Traditional Chinese medicine has been popular among all strata of society [24].

Ancient Chinese surgeon Hua T'ou stressed the importance of physical exercises for improving health and urged everyone: "The body needs physical exercise but it should not be exhausted, carrying out the displacement of bad air in the system promotes free circulation and prevention of the disease" [25].

For the first time in the history of human development, it was in the Chinese empire that a state medical institution, called the "medical order", was created and existed. Although the main task of this institution was the treatment of the emperor and the imperial court, but his powers included the control of doctors who practice medicine, as well as the introduction of necessary precautions and the implementation of certain measures that were in the competence of the state authorities in the case of epidemics, etc. Somewhat more advanced than in ancient India was the system of medical education in ancient China. Archeologists, based on the ancient things found, prove that the pre-medical case in Ancient China had dynastic traits, which means that it was passed from generation to generation. Family's knowledge of medical skills passed from father to son. With the advent of the first signs of statehood in China and the growing influence of religion on the emperor and those who administered the state, a campaign was launched on school preparation for doctors in monasteries, and the leadership role in medicine passed to priests. Such a system of training made it possible to concentrate and systematize the knowledge of many doctors on illnesses within the educational institutions of the monasteries and significantly increase the number of graduate doctors, thus reaching a larger number of patients among Chinese citizens. In connection with the increase in the number of doctors in the beginning of 1 thousand BC in China, special medical commissions were established and operated, which kept a register of physicians and divided them into disciples with appropriate qualifications.

Summarizing the above mentioned facts, we can say that medicine in ancient China has gained state support and has become the basis of society's existence along with religion. Medical education has received extraordinary scientific

impetus and has become the main source of knowledge about man, and the first medical educational institutions – monasteries have become prototypes of modern medical universities. The results of the study prove the impossibility of existence of mankind separately from medicine and that medicine originated with the appearance of man [26].

As we noted above, some scholars believe that the development of medicine as a science began much later, namely from the works of Hippocrates and other Greek medical doctors. However, according to archaeological finds, one of the founders of medicine in Ancient Greece is Asclepius, an Egyptian who moved to Greece. In accordance with Greek mythology, he was the son of the god Apollo, and in the future he himself became a god. According to myths, Apollo not only revealed the secret of medical art to his son, but also gave him the opportunity to study medicine with the centaur Chiron, who knew how to heal people with healing herbs. Having received such knowledge, Asclepius himself could heal the people and raise the dead, which caused Zeus to deprive him of his earthly life and take him to heaven, turning him into the constellation of the Serpentarius, because the serpent was and is a symbol of medicine.

According to archaeological documents, treatment in ancient Greece was carried out not by doctors, but by priests in temples, which accounted for more than 320. The process of healing was through incubation: the patient, had prayed throughout the day, and then lay in the temple and fell asleep. God came to him in a dream and declared his will. However, in most cases, the patient did not recover, and the disease was further exacerbated, so the Greeks began to create medical schools.

In ancient Greece there were several medical schools that competed with each other and, trying to attract more students, began to teach medicine to secular (wealthy) people [27]. Particularly popular were the medical schools in Cyrene, Croton and Rhodes. When they all began to decline, there were two new ones: in Knyda and on the island of Kos. The most prestigious and promising for medical science

was the last one – Hippocrates graduated from this school. These two schools differed significantly in their direction. Knydish school saw a local pathological process in the disease, studied its paroxysm and acted at the site of the disorder. There were many famous doctors in this school. Among them, Arifion who enjoyed special fame. On the Kos the disease was considered a common pathology and was treated accordingly, with attention paid to the physique and other features of the patient. The Kos's school was initially less known than Knydish one, but, with the appearance of Hippocrates, it was significantly ahead of it [27].

Physicians on the island of Kos relied on their ethical principles, known to us as the “Oath of Hippocrates”. Thus, a doctor in ancient Greece was obliged to serve the patient with all his knowledge and skills in conscience. He had no right to give the patient a poison and no drugs for pregnant women to get rid of the fetus, to preserve the medical secret and not to abuse his position [28].

In addition to the temples, another source of medical knowledge was philosophical schools. They studied natural science, and therefore diseases. Philosophers covered medicine from different side than practicing physicians – they were the ones who developed it on the scientific side. In addition, they, through the mediation of their conversations, disseminated medical knowledge among the educated public. The third source of medicine was gymnastics. The people who studied it expanded their range of activities and treated the fractures and dislocations that were often observed in the palestraches. The doctor Herodik from Silivri used gymnastics for the treatment of chronic diseases, and the success of his techniques made many patients seek help not in temples, but in gymnasias [27].

But, nevertheless, the “father of medicine” nowadays Hippocrates, because it was he who was able to bring together three completely different trends: temple medicine, philosophical schools and medicine in gymnasiums. His works, such as “The Hippocrates' Corpus” [29], were and remain the subject of a more detailed and special study.

Explanations to them and their critique are included to a special library.

According to the teachings of Hippocrates on etiology, the diseases are divided into internal and external [27]. External causes of disease origin are: seasons, air temperature, water, terrain; the internal are individual causes, depend on nutrition and human activities. Depending on the season, certain diseases can develop. Hence there is the Hippocrates' doctrine of climate [30]. The age can be compared with the time of year – for each age a different state of heat is typical. Nutrition and movement can cause disorder because of disadvantage or excess, contributing or preventing the consumption of untapped forces. The study of changes under the influence of diseases of ancient medicine began with liquids, as the pathology according to Hippocrates is called humoral. In his opinion, health depends on the proper mixing of liquids, or *kraz* (hist. Greek *krasis* – “mixing”) [31]. The illness originates from the disorder of fluid *kraz*. This is connected with the doctrine of so-called digestion of liquids: for example, when rhinitis flows from the nose, the fluid is initially watery and caustic; as the patient recovers it becomes yellow, dragged, thick, stops annoying. This change in the fluids in the ancient times was marked by the word “digestion” as they believed that most diseases tend to digest juices. While the liquid is “crude”, the disease is at an altitude of development; when the liquid is digested and has taken on a natural composition, the disease is stopped. To cure the disease, you must digest the juices. The withdrawal of the digested fluid was called a crisis. The latter takes place under strictly defined laws, and therefore occurs in a particularly critical day, set for each disease, but some vary depending on various reasons [24].

In a significantly changed form, these views are now used in the study of the outcomes of the disease. Forecast (prognosis) for Hippocrates was the basis of all practical medicine, because it exactly complements what the patient did not want or could not tell. This method of Hippocrates explains the difference between health, illness and danger, which expects the patient in the absence of treatment, and also

what can be expected in the future after a series of medical interventions. The treatment according to Hippocrates is part of the system, which is based on experience and observation, with the use of medicines.

Many of the techniques described by Hippocrates have been used by modern medicine only recently (for example, tapping and listening). Hippocrates describes surgery in detail. Separately developed operations of trepanation, removal of pus from the chest, abdominal puncture and many others. Bleeding forms the weak side of the Hippocrates school in surgery, due to the inability to stop them by ligation of blood vessels. Therefore, amputations, recovered by large tumors, and operations with a large blood loss in general were not conducted and the respective patients remained to the mercy of fate [32]. Hippocrates's philosophy of providing medical care was focused on a holistic model of health care, applying standards and ethical rules that are still in place today [33].

The method of Hippocrates consisted mainly of the desire to diagnose, and then treat the patient based on the totality of all conditions of his life, guided by constant supervision over the course of the disease. This method of Hippocrates became the basis of modern medicine. Hippocrates also was one of the first to begin the clinical medicine. He introduced treatment for patients under the constant supervision of a physician: patients should have been lying and taking medication under the constant supervision of a doctor. More than two millennia have already passed, but clinical medicine started in ancient Greece by Hippocrates is the basis of modern medicine.

## CONCLUSION

Having examined the topic chosen for our research, we can confidently agree with the words of the prominent scientist Ivan Petrovych Pavlov, who believed that: “Medical activity is the same age as the first human”. After analyzing the results of our research, we came to the conclusion that medicine arose simultaneously with the emergence of human; existed and developed together with human in an indivisible

connection, improving and moving to a new level each year.

Medicine already existed alongside the primitive man at the earliest stages of human development. However, the treatment was of a primitive nature, namely: rubbing and kneading of sick places; cessation of bleeding by clamping; handling of fractures and applying a splint; attaching to the damaged places of a branch or a piece of tree bark, while healing means were medicinal herbs: causing diarrhea, vomit; solar heat, water and other substances. Without a fundamental idea of the causes of most diseases, the primitive man still had some practical skills that provided a longer life.

The development of humanity also developed medicine. Evidence of this was the availability of descriptions of the diseases of ancient Egyptians in ancient scientific books – papyrus. It is their presence that enables us to state that ancient Egyptian physicians conduct prototypes of modern clinic records, which are conducted by modern doctors, as well as to state that there is an appropriate regulatory framework regulating the conduct of these records. It was medical papyrus that became the most significant for historical research, as documents having a certain form and containing relevant medical, social and legal information.

Doctors of ancient India paid a lot of attention to establishing the correct diagnosis of the disease. Thus, for the diagnosis of internal disease, medical manuals were written by Indian doctors – manuscripts which included the mechanisms of patient examination, the features of many diseases, diagnosis and treatment procedures for diagnosed illness. This proves the presence of prototypes of modern patient examination protocols, diagnostics of the disease and methods of treating a particular illness in the hands of Indian doctors who lived 5 thousand to 2 thousand years BC. The studies we conducted proved the well-developed system of medical education in ancient India. For the first time in the history of mankind, the state authorities in ancient India began to provide state supervision and control over the quality of medical care provision.

Our research proves that modern methods of providing medical care are not much different from the old ones. Thus, the Chinese doctors near 1 thousand years BC prescribed the appointment like the modern recipe for the treatment of the patient. Currently, about 2000 ancient recipes have been preserved, and some of them are still used at present. Chinese doctors are the first in the history of medicine to officially begin to record the course of the disease of the patients under study, indicating in the relevant registers the date of the review, changes in the symptoms of the patient, the appointment of treatment and its results. In other words, 500 years BC Chinese doctors used and conducted a modern clinic records for treating patients.

With the advent of the first signs of statehood in China and the growing influence of religion on the emperor and those who administered the state, a campaign was launched on school preparation for doctors in monasteries, and the leadership role in medicine passed to priests. Such a system of training made it possible to concentrate and systematize the knowledge of many doctors on illnesses within the educational establishments – monasteries and significantly increase the number of graduate doctors, thereby reaching more patients. Medicine in ancient China has gained state support and has become the basis of society's existence along with religion. Medical education has received extraordinary scientific impetus and has become the main source of knowledge about human, and the first medical educational institutions – monasteries have become prototypes of modern medical universities.

But the main prosperity of medicine was acquired in Ancient Greece thanks to the efforts of the prominent doctor-scientist Hippocrates. The Hippocratic oath which has become a kind of medical constitution is known by every modern medical worker. His works, such as the "Hippocrates' Corpus", remain the subject of more detailed and special study and are a scientific, medical and legal monument. Hippocrates's method of correct diagnosis, and further treatment of the patient

based on the totality of all conditions of his life, guided by continuous monitoring of the course of the disease, became the basis of modern medicine and laid the foundation for clinical medicine.

Taking into account the foregoing facts, we have proved that medicine arose with the emergence of human and passed all stages of the development of humanity, constantly improving and supporting the human.

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