Hippocratic Medicine Essay, Research Paper

Introduction

Hippocratic medicine remains one of Ancient Greece’s lasting contributions to the field of science. Lacking the equipment physicians today take for granted when diagnosing and healing their patients, Hippocratic physicians were forced to create a novel system for explaining and curing disease based upon the prevalent scientific theories of their era. This system became known as the humoral theory of disease. Humoral theory incorporated the theories of Presocratic philosophers in order to explain disease and offer help for a cure. Two themes characterizing Presocratic philosophical thought dramatically influenced humoral theory. The humoral theory approach of Hippocratic medicine was based upon Presocratic philosophical musings about the relationship of man to the world. By the time humoral theory was vogue, philosophers had concluded that both man and the world were governed by the same natural laws. Humoral theory also was based upon Presocratic theories about change and how it occurred in the world; humoral theory depended upon the assertion that contrasting elements constantly contradicted each other, leading to continuous change on one level and stability on another. These two Presocratic theories shaped humoral theory and allowed the physician to develop a rational and empirically based approach to medicine.

Hippocrates – Separating the Man from the Myth

Before we can trace the development of these theories by the Presocratics we must first consider Hippocratic medicine and humoral theory. Most of what is known about the historical figure Hippocrates, the supposed founder of the Hippocratic medical approach, must be evaluated with caution. Hippocrates lived c. 460-370 BC, but further reliable information about his life is difficult to obtain.(1) Two passages from Plato are seen as legitimate sources of information about Hippocrates’ life. Plato lived from 427-348 BC, making him a contemporary of Hippocrates. A passage from Plato’s work Protagoras suggests that Hippocrates was a physician, associated with the island of Cos, who taught medicine to students for a fee. Another passage from a work of Plato, the Phaedras, alludes to a "method" by which Hippocrates gained an understanding of medicine. These sources provide some means by which to evaluate the impact of Hippocrates upon ancient medical practice.

The Corpus Hippocraticum

Many other texts attributed to Hippocrates shed light upon the Hippocratic method of medicine. None of these texts may be identified as Hippocrates’ own work, however. These works are called the Corpus Hippocraticum and number upwards of sixty.(2) Scholars have suggested that the texts may have been part of a library collection, originally from Cos, that was subsequently moved to Alexandria and then added upon, building the collection of medical texts we have today.(3) While not primary sources, these works were written by Hippocrates’ students and practitioners of his medical theory. Therefore, the texts of the Corpus Hippocraticum provide us with an understanding of the elusive Hippocratic method first articulated by Plato.

Humoral Theory

The Corpus Hippocraticum outlines how physicians adhering to this particular school of thought believed disease occurred. Physicians who followed the Hippocratic method attributed chronic disease to the imbalance of one of four humors in the body.(4) The text The Nature of Man discusses these humors–blood, yellow bile, black bile, and phlegm– and the necessity of balancing them to maintain health. Physicians associated each humor with a season of the year. A Hippocratic physician would diagnose a cold caught in the winter as the result of a preponderance of phlegm, while that very same cold caught in the summer would be caused by a preponderance of yellow bile.(5) Humoral theory became the basis for therapeutic treatments; the physician would attempt to "balance" the skewed humors with his treatment.

The Regimen

The Hippocratic physician would pursue these treatments in an increasingly aggressive fashion. The physician’s first option was to suggest a regimen to his patient. This treatment consisted of advice regarding what the patient should eat and drink, and the amount of sleep and exercise he needed; it amounted to a cautious "let nature take its course" approach.(6) The purpose of the regimen was to void the body of the imbalanced humor through a diet and exercise program. The physician would tailor such a regimen to the time of the year and to specific patient characteristics, and would wait until his patient’s condition noticeably improved or worsened.

Drugs and Humoral Theory

Often this non-intrusive treatment had no effect upon the patient, whose condition had worsened, and more aggressive cures were needed. The Hippocratic text Aphorisms outlined the order that the treatments were to follow: "What drugs will not cure, the knife will; what the knife will not cure, the cautery will; what the cautery will not cure must be considered incurable."(7) The choice of drugs to be administered was predicated upon the perceived humoral imbalance the physician sought to correct. The drug of choice was hellebore, popular because it induced both vomiting and diarrhea, tangible side effects the physician would interpret as the voiding of the humor.(8) Hellebore is an extremely poisonous plant which sometimes killed the patient; those lucky enough to quickly void themselves of its poison managed to survive. The physician could justify such drastic treatment because he believed that the purged material indicated he had successfully balanced the offending humor and thus treated his patient.

Venesection

Not surprisingly, this treatment also left the patient in worse health, so the physician adopted even more traumatic methods to cure him. The physician resorted to the knife and blood-letting as a solution to the illness. Venesection was practiced ostensibly because it allowed the imbalanced humor a means of directly escaping the body, thereby restoring the humoral balance and the person’s health. The physician would cut furthest away from the point that hurt, drawing the humors away from that painful spot.(9) He would choose the amount of blood he wanted to spurt out by placing a cup over the bleeding incision; once the cup had filled, the physician was satisfied that he had completed treatment.(10) As an application of humoral theory, venesection was deemed a reasonable and humane method of treatment.

Cauterization

The same reasoning explained the physician’s last-ditch effort, cauterization. Assuming that the patient had not yet died from either the disease or the previous treatments, cauterization involved burning the skin in one last attempt to "consume" the excess humor. Then the physician would allow the resulting wound to ulcerate, which he would then irritate with caustic drugs, like mustard-seed paste, to allow the humors to slowly drain out of the body.(11) The area chosen for cauterization was to be located as far as possible from the actual wound, again to draw the excess humors from the painful sight to a place where they could leave the body.

The Two Presocratic Themes Running Through Hippocratic Medicine

How did the increasingly drastic therapeutic treatments prescribed by humoral theory come to be embraced by the Greek physician as effective treatment in the first place? The answer lies in the long and storied influence of Presocratic thought upon humoral theory. As mentioned before, the Presocratics developed two themes which ultimately became critical to the application of humoral theory. The first theme originated out of the attempt to reconcile man and the world in which he lived; the second theme originated out of an attempt to explain how change occurred in nature.

The Beginnings of Presocratic Philosophy – Thales

The Ionian philosophers of the sixth century revolutionized how ancient man saw the human body because they attempted to explain all natural phenomena in terms of rational reasoning rather than relying upon myth and the gods. Thales (fl. 585 BC) asserted that the earth developed gradually from the primary element water through a natural and observable process; the creation of the earth was not an arbitrary act of the gods.(12) While Thales made no direct suppositions about mankind, he established a new method of rational thinking; this thinking was based upon the observation of nature and would lead later Presocratics to conclude that the rules governing the natural world applied to the inner workings of the human body as well.

Anaximander and the Aperion

Anaximander (fl. 550 BC) further elaborated upon the connection made by Thales between man and the natural world while introducing the notion of pairs of opposite elements as a means of change. Anaximander postulated an indefinite substance called aperion from which fire, air, earth, and water were derived. The four elements were paired with their opposites into two groups and made retribution to each other; change occurred between the same original quantity of these opposite substances.(13) Anaximander’s extant fragment illustrated this tug-of-war, between the opposite elements, which allowed for change despite the overall continuity of the system. This first articulation of the battle between opposing forces would be elaborated upon by later Presocratics and eventually form the basis for humoral theory.

Anaximander’s Theory of Cosmogony

Anaximander also supported Thales’ idea of the link of man to the natural world in which he lived, an idea whose importance to medical theory deserves further elaboration. Anaximander linked the two via his theory of how the cosmos and the beginning of life and mankind were formed. He believed both the heavenly bodies and the first creatures were originally encased, the heavenly bodies initially surrounded by fire, the first creatures initially surrounded by moisture. Men were incubated inside these first fish-like creatures until they could nourish themselves.(14) Anaximander described the encasement in similar terms, suggesting a connection existed between the events.

Why is this link so important to the understanding of Presocratic influence upon Hippocratic medicine? The Hippocratic physician could not see the inner machinery of the body on a regular basis, and even if he could poke around the chest cavity of a patient for some time, he had no knowledge of physiology.(15) The physician had to infer from the outside world what might be happening inside the human body. He had to assume that the human body was governed by the same rules, and therefore behaved in the same manner, as the natural world. The connections that these philosophers drew between such diverse elements as the birth of the heavens and the birth of the first creatures provided the physician with the basic assumptions he needed in order to apply humoral theory.

Heraclitus and the Continuity of Change

Heraclitus (fl. 500 BC) added his own personal touch to these themes, elaborating upon the concept of the unity of opposites while connecting man to the world through his description of Logos and man’s soul. He believed that each pair of opposites formed a unity that could never be broken down.(16) To Heraclitus, all opposites were produced either by a single subject, or part of the same process. Each pair of opposites produced a unity, and this unity depended upon a precarious balance similar to that envisioned by Anaximander. Heraclitus described this balance with his war metaphor. Heraclitus was primarily concerned with the underlying stability that he believed was evident in change and thought that this stability exerted a measure of control over it.(17)

Heraclitus and Logos

An extension of Heraclitus’ belief in the stability underlying change was his theory of Logos,. According to Heraclitus, logos connected all things in nature and thus served as a unifying formula. Man himself was an inexorable part of logos. This belief in the unifying formula of logos was apparent in Heraclitus’ cosmology(18). The primary element of Heraclitus’ world was fire; in his view of the world some of the fire was extinguished, forming both land and sea, and some remained burning as the stars in the heavens. Man fit into this scheme of the cosmos because his soul came from the same heavenly fire. Heraclitus was the first philosopher to directly relate the structure of the soul to the structure of the world.

Empedocles and the Four Roots

Empedocles( c. 495-435 BC) marked an important step in the evolution of humoral theory with his belief that the cycle of change depended upon the interplay of four equal roots: earth, fire, water, and air. Empedocles is the first Presocratic to see the elements as equal.(19) The four roots are influenced by the warring entities of Love and Strife. Love and Strife behave in the same manner as Anaximander’s pairs of opposites; when Love dominates, Strife is correspondingly weaker, and vice versa. Love is in harmony with the roots, while Strife is in discord.(20) Empedocles believed in a dual process made up of the creation of one from many (Love), and then many from one (Strife). The process would repeat itself endlessly; Empedocles understood this repetition as a sort of changelessness. This system allows for continual change and global stability at the same time, a theme previously stated by Heraclitus.

Empedocles evidently felt he had to justify his theory of the four roots; he argued that the four roots were intrinsic in nature and that man could identify them. Physicians who practiced humoral theory, with its emphasis upon the seasons of the year, adopted a similar method in justifying their course of treatment. Empedocles also asserted that his four element system could produce the stunning variety that man saw in the world through his painter analogy. Both of these efforts marked the progression of the new style of reasoning, started by Thales, that de-emphasized metaphysical explanation in favor of more concrete terms.

Empedocles’ four root theory of change became the cornerstone of humoral theory. Because he also reinforced the theme that man and nature are governed by the same rules, physicians could now attribute disease to the domination of one of the previously equal roots(humors) in the body. His theory provided for treatment as well: simply devise a way for the offending humor to escape or balance itself out and the patient is cured. The theory was appealing because it was based on natural phenomena that were easy to understand; witness Empedocles’ justifications of his theory above.

Empedocles’ later poem Purifications may have suggested the Presocratic theme that the rules governing the heavens also apply to man. Empedocles believed that all men, once divine spirits, were condemned to be mortal, but that divinity was again possible after the cycle of incarnation.(21) The cycle of incarnation is described in similar terms as the formation of the heavens; in particular, strife is seen again as the disruptive force in the system, paralleled to sin. This is a tenuous conclusion to draw from such sparse evidence, but if it were indeed the case, then Empedocles was echoing previous philosophers in his belief that natural laws applied to both men and the world.

Evaluating the Influence of Presocratic Thought upon the Physician

Hippocratic medicine was indebted to those Presocratics who provided the assumptions upon which humoral theory was based. Hippocratic medicine evolved along with Presocratic thought. The question which remains is to what extent the typical physician was aware of such Presocratic material: did the physician have any cross-discipline knowledge which influenced his practice of medicine, or is this simply an example of two fields of science arriving at the same conclusions via independent means? We know the Hippocratic physician was literate and had some cross-discipline knowledge; he took account of astronomical events because these events helped him to distinguish the seasons of the year.(22) Professor Phillips’ research has indicated that the physician had a comprehensive understanding of the solstices and equinoxes, as well as knowledge of the rising and setting of the Dog Star and Pleiades.(23) He read parapegmata, astronomical calendars engraved on stone..(24) These calendars listed astronomical phenomena on a month-by-month basis. The parapegmata suggest that the physician was acutely aware of another field of study which could impact his profession. The introduction to the Hippocratic treatise The Nature of Man bears this out as it alludes to "theorists" who have rival monistic explanations for the creation of the cosmos. The unknown author even mentions Melissus by name, a fifth century Presocratic. While the author does not hold the Presocratics in high regard, this is nevertheless undisputable evidence of the typical Hippocratic physician’s awareness of Presocratic philosophical teachings.

A Final Application of Presocratic Thought to Hippocratic Medicine

Before I conclude my paper I want to examine an area of personal interest. Consider what follows to be a more leisurely discussion. We have seen how Presocratic thought influenced humoral theory and the treatment for chronic disease; by chronic disease I mean an illness of some kind. But Presocratic influence extended into other areas of medicine, like acute wound treatment, as well. This is an especially gruesome and interesting area of study. I will outline the steps by which a Hippocratic physician would treat such a wound to show that the Presocratic influence upon Hippocratic medicine was truly pervasive.

One of the most interesting cases is that of the boy who was kicked in the head by a horse.(25) The physician would first examine the wound with a metal probe; a sanitary procedure if the probes were kept clean. He attempts to determine if the impact of the hoof fractured the skull or merely dented it. In order to determine if a fracture exists, he must shave the patient’s head, enlarging the superficial skin wound in the process. He packs this with a concoction made of vinegar and barley flour, and covers the now-gaping wound with a bandage.(26) The next day he removes the wound ointment, and covers the bare skull with a black pasty substance.(27) The third day he scrapes the skull with a knife; the black paste will come off everywhere except from fractures.(28) If the skull is fractured, he will not operate; if the skull is not fractured, he will drill a hole! (29)

The physician drills when there is no apparent need to do so because humoral theory dictates that the blow to the head causes humors to accumulate around the injury. Pus will form if the humors are allowed to accumulate, so the humors need a way out; hence the physician’s decision to drill a hole in the skull. The physician puts his patient on a regimen and treats the open wound with a cathartic, a harsh mustard-seed based cream that is used to draw out the excess humors.(30) Then he sends the patient on his way, quite possibly in worse shape than when he first arrived!

Most sick people would have been better off not visiting the physician who practiced Hippocratic medicine. Yet this physician was a learned and scholarly man who practiced his craft in accordance with the prevailing theory of disease, humoral theory. Humoral theory held that the key to health was the successful balancing of the four humors present in the body. This theory was based upon the philosophical contributions of the Presocratics, who first reasoned that man and nature were of the same ilk and followed the same laws, and then reasoned that because of this similarity, the rules for change in the outside world applied to man as well. When these two themes were interpreted by physicians, the humoral theory was created. We know today that the physician did indeed come into contact with such material, and that some were even skeptical and critical of it. Ultimately the humoral theory was an educated guess about the inner workings of the body which was based upon Presocratic assumptions about natural phenomena.

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