Analysis Of Systemic Diseases Based On Frequency Of Humoral Pathologies In Four Temperaments.

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Abstract

The structural components of the body, Humors *(Akhlat)* which composed of elements and natures in different mixtures, proportions and combinations. These are supposed to be the building units of organs and thus, body, and are considered as primary body fluids produced from digested food. These four humors are blood, phlegm, bile and black bile. The balanced ratio and mixing of these fluids and their qualities constitute the proper health conditions. On the contrary improper proportion and irregular distribution of humors results in disease. In the study both gender**s** of individual (20 to 50 years of age) including of 100 sick patient listed and evaluated was assessed by the SPSS that clearly exhibit 34, 40, 14 and 12 cases of blood, phlegm, bile and black bile humors respectively. The case summary of diseases were obtained through four dominant humors and calculated with SPSS. These cases were described into seven body system such as nervous, endocrine, blood and cardiovascular, gastrointestinal and hepatobiliary, respiratory, urogenital and musculoskeletal systems. To evaluate the frequency of occurrence of a systemic disease in a humor all these above mentioned parameters of systemic disorders were analyzed and the results delineated that the psychoneurological disorders and Musculoskeletal disorders such as arthritis were increasingly transpired in dominant black bile humor as compared to other humors. Endocrinological disorder such as Diabetes mellitus is more commonly and frequently occurred in dominant blood humor as well as the blood and circulatory system disorders and gastrointestinal and hepatobiliary system disorders are more frequently apparent in dominant yellow bile humor and blood humor whereas respiratory and urogenital system disorders are frequently encountered in dominant Phlegm humor in the body fluids.

In conclusion, the four humors play a part in the interpretation of maintaining the function of different body systems exhibiting humoral and temperamental characteristics, thus ultimately

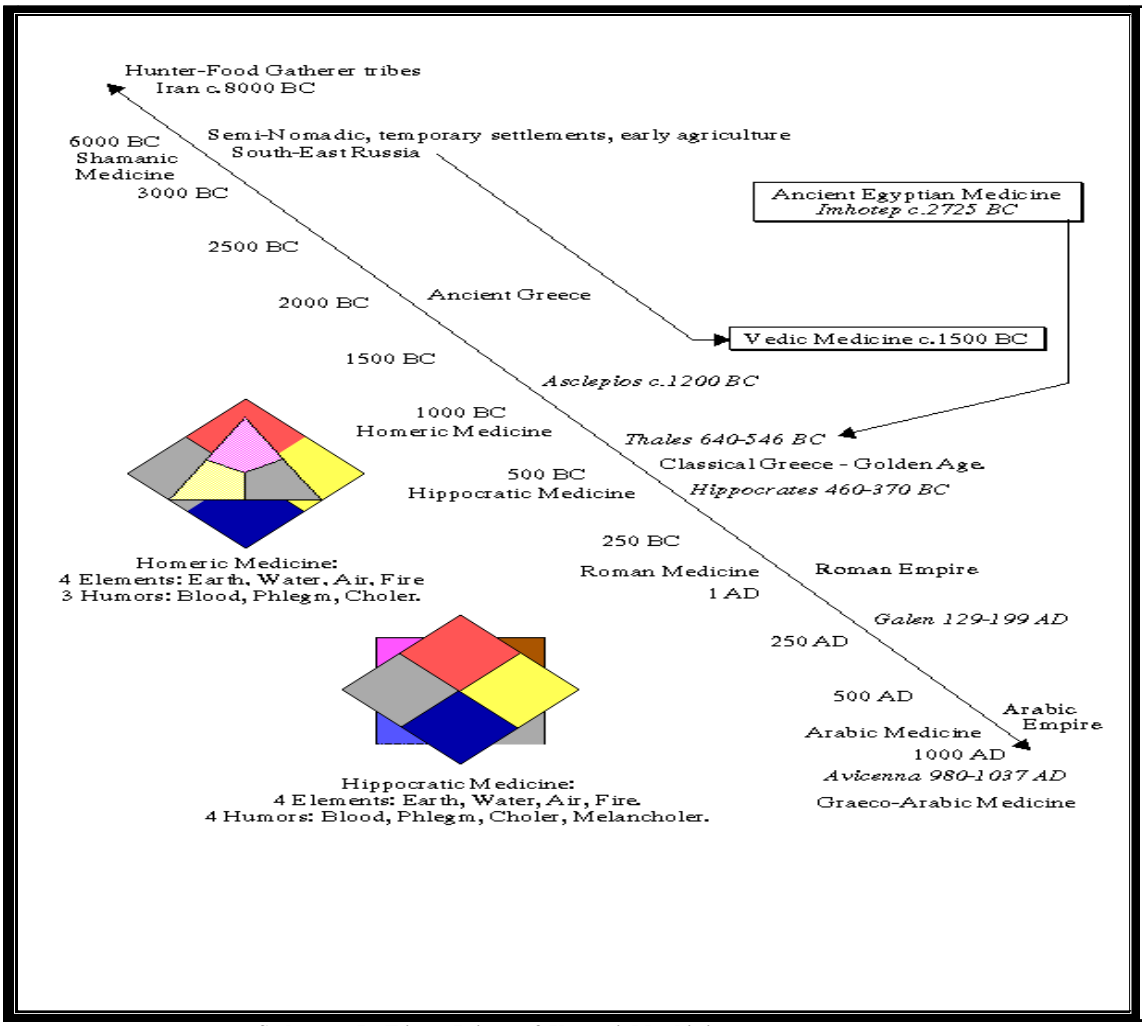
causing disease due to qualitative and quantitative changes.

Keywords:

Four Humors, Four Temperaments, Blood, Phlegm, Yellow Bile, Black Bile, Diseases/ Disorders.

1. INTRODUCTION

Over Unani-Tibb philosophy created with the philosophical insight of ancient Greeks such as Aristotle, Plato and Descorides, and gained momentum with the Arab region. The knowledge of the basic sciences that underpin medicine, such as chemistry, physics, anatomy, physiology and biochemistry were all understood and interrelated to the metaphysics, astrology and theology. This knowledge base, which developed over thousands of years, encompassed the creation of matter, creation of the universe, the creation of mankind, the nature of mankind, and the relationship between mankind and the environment. With respect to medicine, which provided clear insight into the state of health, the various causes of health and disease, the pathological processes which lead to diseases, and the treatment of clinical disorders. Therefore, after visualization of three humors, Hippocrates proposed four humor theory, and the time line of which is depicted in scheme I.



Scheme I: Time Line of Unani Medicine

1.1. CONCEPT AND PRINCIPLES

Unani medicine is based on the Greek philosophy according to fundamental principle that the body consist of basic four elements (Arkan) i.e. earth, water, air and fire which have temperaments (Mizaj) i.e. cold, hot, moist, and dry. After mixing and interaction of these four elements a new compound comes into existence such as *cold and dry, cold and moist, hot and moist and hot and dry respectively.*

Greek physician Hippocrates (460-370 BC) was "The father of medicine". His main principles was the rule of harmony, the theory that all body systems are in balance and that the disease is the result of imbalance. Unani medicine was the first to show that disease was a natural process and that symptoms were the reactions of the body to the disease. It believes in the humoral theory that presupposes the presence in the body of four humors: blood (dam), phlegm (balgham), yellow bile (safra) and black bile (sauda) respectively. Humor has its own temperament - blood is hot and moist, phlegm is cold and moist, yellow bile is hot and dry and black bile is cold and dry.

Every person attains a temperament based on dominance of the humors that represent the person's healthy state, expressed as sanguine, phlegmatic, choleric and melancholic.

The body has simple and compound organs which nourished through four humors (blood, phlegm, yellow bile and black bile). See table 1.

Table 1: Four humors and their correspondent seasons, elements, organs and temperaments.

Humor	Season	Element	Organ	Qualities	Temperament
Blood	spring	air	liver	warm & moist	Sanguine
Phlegm	winter	water	brain/lungs	cold & moist	Phlegmatic
Yellow bile	summer	fire	gall bladder	warm & dry	Choleric
Black bile	autumn	earth	spleen	cold & dry	Melancholic

The Unani system of medicine is a holistic approach to disease healing that believes in restoring balance to the physical, mental, emotional and spiritual aspects of the human body through diet, medicine, and lifestyle modification to have an effect on healing. According to basic principles, Unani medicine system believes in advancement of health, prevention and cure of diseases. Human health is based on the "*Basic Physical Principles* and *Six Essential Causes"*, If these are followed then health will be maintained otherwise there will be disease. Main concepts originated from the philosophy of Unani-Tibb, with reverence to health care, are the relationship between the macrocosm (universe) and the microcosm (human body).

1.2. PATHOLOGIES OF FOUR HUMORS

Humoral understanding pathology is most valuable contributions to the art of healing of Unani's system medicine. When we understands the physiology (normal characteristics) and pathology (abnormal characteristics due to qualitative or quantitative changes) of the four humors, a number of previously unexplained mysteries become clear about how the organism responds to both health and disease.

THE HUMORAL DISEASES

The disease may be associated with humoral imbalance. When we look at these diseases, we can see that they often involve the humor's receptacles and accumulation sites.

Phlegm (balgham) tends to initially accumulate and get aggravated in the upper gastrointestinal tract (GIT), starting with the stomach, then spreading to the lungs, chest and respiratory tract; throat, esophagus and pharynx; and finally, the head, nose and sinuses.

Yellow Bile (safra) tends to initially accumulate and get aggravated in the middle GIT, starting with the liver, gall bladder and hepatobiliary system, and then the stomach, duodenum and small intestine.

Black Bile (sauda) tends to initially accumulate and get aggravated in the bowels and lower GIT, producing constipation, gas, colic, bloating and irritable bowel. The stomach and hepatic portal system are subsidiary focus areas. All these intial accumulation sites are adjacent to spleen, which is the storage vessel or receptacle for black bile.

The three humors that are most likely to cause imbalances in the digestion, metabolism and nutrition are all starting to spread pathologically from different parts of the GIT. This fact highlights the primary importance of maintaining healthy, balanced pepsis and digestion in the prevention of humoral diseases.

Blood (dam), the fourth humor is more generalized and systemic in its accumulation patterns, lacking any particular localization in the GIT. This is because blood is the essence of life and health, and the bottom line in the overall nutrition of the organism.

Pathology of humoral understanding is one of Unani's medicine system most valuable contributions to the art of healing. A number of previously unexplained mysteries about how the organism responds to both health and disease become clear when we understands the physiology and pathology of the four humors.

2. MATERIALS AND METHODS

This is a descriptive and observational study aimed for selecting subjects, assessing and collecting prospective data on the current health status of candidates in a research study. It is unicenter assessment based study, conducted on the patients suffering from diseases admitted in Karachi around at Shifa-ul-Mulk Memorial hospital Hamdard University, (SMMH-HU) Karachi.

2.1. Selection Criteria:

The case groups included patients with any evident diseased candidates. The patients suffering from any manifest disease of either sex, between the ages of 20-50 years.

2.2. Diagnostic Technique

The diagnosis for this study was done through the history taking, Evaluation of temperament according to humors, and laboratory tests required mainly by the clinical laboratory at (SMMH-HU), Karachi.

2.3. Clinical Evaluation of Temperament according to Humors

The evaluation of temperament according to humors in 100 candidates was carried out on the basis of set parameters such as morphological,

Physiological and psychological features which are further classified and details are given in clinical trial Performa. Every parameter was given a mathematical mark such as one and total count in each was 10. So in all these four different types of temperaments, the greater the marks secured in each case was designated as dominant temperament of body.

2.4. Study Design

This observational and descriptive research study for selecting subjects, assessing and collecting prospective data on the current health status of candidates. It is unicenter assessment study, directed on the patients suffering from diseases, subjects living in Karachi, at (SMMH-HU), Karachi.

Adult patients examined by the general practitioner (GP) to diagnose the patients' illness and to evaluate the patient's temperament and their associated dominant humor.

2.5. Eligibility

a. Ages eligible for study: 20-50 years.
b. Genders both male and female
c. Exclusion and inclusion criteria.

2.6. Exclusion Criteria:

The main exclusion selection criteria of sick candidates for this study were:

a. Patients belonging to a distant area outside Karachi and below the age of 20 years and above the 50 years were excluded.

b. Patients suffering from diseases required radiological investigations for clear diagnosis, with acute hemorrhages, with accidental cases and unconscious patients, having congenital metabolic disorders and obstetric patients were excluded.

a. Patients having any chronic infections e.g. leprosy, neoplastic events and tuberclosis in the medical history were considered areas for exclusion.

b. Patients having any history of adverse reaction to any of the drugs study as or contraindicated for their use.

2.7. Inclusion Criteria

The subjects who fulfill the following criteria were included:

a. Patient suffering from any evident disease of both sex and all socioeconomic individual including lower, middle and higher are included.

b. Its outskirts or suburban areas and patients living in Karachi.

c. Patients having Pathological finding on routine examination.

All patients gave verbal or written, informed consent to their participation, and the protocol was approved by the appropriate Independent Ethics Committee of Faculty of Eastern Medicine, Hamdard University, Karachi (ICEFEMHU).

Sample Size

The study was conducted on patients (n = 100) irrespective of socioeconomic status.

2.7. 1. Sample Selection

The sample was selected from the outpatient department listed at (SMMH-HU) on the basis of the level and inclusion and exclusion criteria of the patients who met the study criteria as patients.

2.7.2. Data collection

Data collected for this research work in-

cluded the completion of the Performa clinical trial through personal observation, personal interviews, and the use of case, file and documents.

2.7.3. Statistical Analysis

Statistical analysis were performed using SPSS.

3. RESULTS AND DISCUSSIONS

The data obtained on "Identification and determination of humors in blood, applying clinical and conventional laboratory techniques" are described in chronological order as follows.

The history taking of 100 sick patients was carried out by the evaluators that consists biographic data of candidates, presenting complain , history of presenting illnesses, past medical and surgical history, personal and socioeconomic history, general physical examination, systemic examination, provisional diagnosis, laboratory investigations and confirmed diagnosis. So, the sick candidates exhibited different types of disorders or malaise which are categorized in seven body systems such as nervous system, endocrine system, blood and cardiovascular system, respiratory system, gastrointestinal and hepatobiliary system, urogenital and musculoskeletal system. All the candidates, then dominant temperament according to humors and dominant body humor were evaluated. The events leading to the determination of the said area are as follows.

Table 2:Age distribution of sick candidates in four humors

AGE GROUPS (YEARS)	EVALUATION DOMINANT HUMORS				TOTAL (N)
	Blood	Phlegm	Bile	Black Bile	
20-25	5	7	2	0	14
25-30	4	5	3	0	12
30-35	6	8	3	2	19
35-40	5	5	2	1	13
40-45	6	9	3	3	21
45-50	8	6	1	6	21
Total	34	40	14	12	100

The patients who were suffering from different diseases designated as sick candidates were enrolled at the base line. Out of 100 patients the dominant body humor was then evaluated both in male and female patients as blood humor, phlegm humor, bile humor and black bile humor. In this respect data shown in Fig.1, The male and female ratio was 55% and 45% respectively. Phlegm as dominant humor was quite significant as majority of the sick patients registered in male and female were 23 and 17 respectively. Where as blood follow the suit as 34 patients and in decreasing order from 14 in bile and 12 in black bile were enrolled.The explanation regarding the phlegm

as dominant humor in the the patients living in Karachi was assigned as Karachi is a very humid city being close to the sea and the meteorological data indicate that humidity is always on higher side in Karachi with the rest of country. It is understood that humidity always increases the phlegmatic secretions in the human subject. Thus, due to moisture and humidity the microbial flora prevalence is quite higher, due to which micro-organisms can cause pathogenesis in subjects with phlegm humor as dominant body fluid more easily and actively is being increased. This all creates diseases pertaining to respiratory ailments. Further, it should be mentioned that sick people having black bile as dominant humor decreases as a result of which the number of patients having black bile humor are low in frequency occurrence.

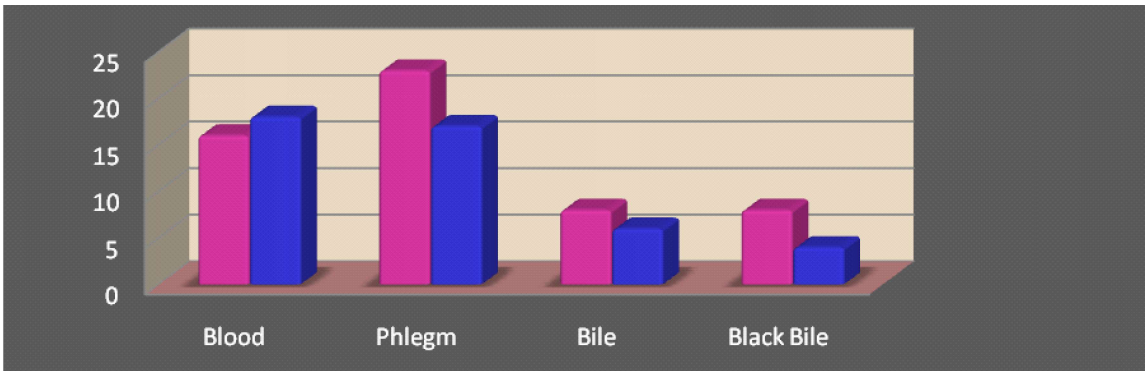


Fig. 1: Patient gender distribution in four humors

Male = 55% and Famale = 45%

The data obtained on "Identification and determination of four humors in blood, applying clinical and conventional laboratory techniques in sick candidates. In this case 100 patients suffering from different diseases were evaluated according to protocol Performa, as attached in the experimental studies, such as history taking; evaluation of dominant temperaments according to dominant body humor. The evaluation exhibit 34, 40, 14 and 12 cases of blood, phlegm, bile and black bile humors respectively. See table 2.

It is due to the fact that phlegm is more frequently encountered due to humidity and environmental changes.

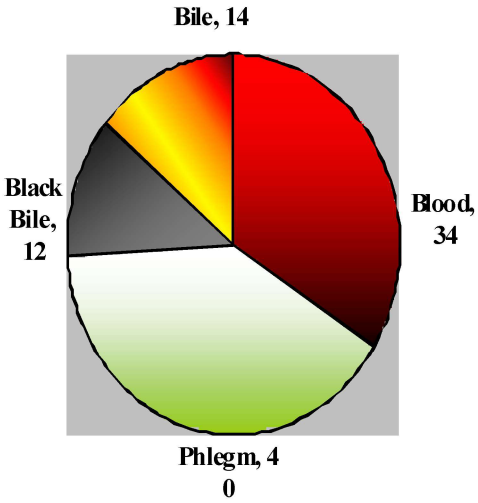


Fig. 2: Distribution of patients into the humors

This may further augment with the allergic responses (intrinsic and extrinsic) due to allergens, diet or nutrients and other life style factors.

Thereafter, sick candidates it was followed with blood related disorders and as observed 34 in numbers. The sequence of events in case of blood can be assigned due to the quantity and quality of blood, If the hemoglobin concentration decreases then anemia ensues due to iron deficiency, the second disorder related to blood is hypertension which could be either essentials or secondary hypertension, the 14 cases were detected in bile that may arise due to jaundice, cholecystitis and cholilithiasis. Where 12 cases were detected in black bile and not very common in case of sick candidates in this study. As such production of black bile in the body is always in lesser extent therefore trauma of the case of black bile registered are less in numbers. This is mixed with associated disorder or G.I.T and urogenital system. The overall impact of determination of humoral analysis in sick candidates patients exhibit that these are in decreasing order such as phlegm, blood, bile and black bile.

Table 3: CASE SUMMARY

Diseases	Evaluated Dominant Humors			
	Blood	Phlegm	Yellow Bile	Black Bile
Allergic Rhinitis	1	1	0	0
Allergic Rhinitis, APD, Hyperlipidemia, Diabetes Mellitus	0	1	0	0
Amenorrhea, hypertension	0	0	1	0
Anemia	0	1	0	0
anxiety, Hypertension	0	0	0	1
Anxiety, Peptic Ulcer	0	0	0	1
Anxiety, Gout	0	0	0	1
APD	0	0	2	0
APD, Arthritis	0	0	1	0
APD, UTI, Anxiety	0	1	0	0
Arthritis	0	0	1	0
Arthritis	1	0	0	0
arthritis, Hypertension	0	0	1	0
Arthritis, UTI, Bronchitis	0	1	0	0
Asthma	0	2	0	0

Bronchitis, UTI	0	1	0	0
Cholecystitis, UTI, Anxiety, Arthritis	0	0	0	1
Cholecystitis, UTI, hypertension	0	0	1	0
Chronic Bronchitis	0	9	0	0
Depression, Gout	0	0	0	1
Depression, Hypertension	0	0	0	1
Depression, Peptic Ulcer	0	0	0	1
Diabetes mellitus	4	0	0	0
Diabetes Mellitus, Hyperlipidemia, Anxiety	1	0	0	0
Diabetes Mellitus, Sciatica, Anxiety	1	0	0	0
Diabetes mellitus, Sinusitis	1	0	0	0
Dysmenorrhoea, UTI, Hypertension	0	0	1	0
Flue, Diabetes Mellitus	1	0	0	0
Flue, Diabetes Mellitus, Depression	1	0	0	0
Gastritis, Anxiety	0	1	0	0
Gastritis, Diabetes Mellitus	0	1	0	0
Gastritis, UTI, Diabetes Mellitus, Depression	0	1	0	0
Gout	1	0	0	0
Gout, Depression	1	0	0	0
Hyperlipidemia	1	0	0	0
Hyperlipidemia, Diabetes Mellitus	0	1	0	0
Hypertension, Depression	1	0	0	0
Hypertension, Diabetes Mellitus	4	0	0	0
Hypertension, Diabetes Mellitus, Anxiety	0	0	0	1
Hypertension, Hyperlipidemia	6	0	0	0
Hypertension, Hyperlipidemia, Chronic Bronchitis	1	0	0	0
Hypertension, Hyperlipidemia, Diabetes Mellitus	0	1	0	0
Hypertension, Hyperlipidemia, Gastritis, Diabetes Mellitus	0	1	0	0
Hypertension, Hyperlipidemia, UTI	0	1	0	0
Hypertension, UTI	1	0	0	0
Jaundice	0	0	3	0
Leukorrhoea	0	1	0	0
Leukorrhoea, Dysmenorrhoea	2	0	0	0
Lumbago, Diabetes Mellitus	0	1	0	0
Peptic ulcer	3	0	0	0
Peptic ulcer, Anxiety	0	0	0	1
Peptic ulcer, Anxiety, Hypertension	0	0	1	0
Peptic ulcer, Gout	0	0	0	1

Peptic ulcer, Stress	1	0	0	0
Peptic ulcer, Stress, Hypertension	0	0	1	0
Peptic ulcer, UTI, Leukorrhoea	0	0	0	1
RTI	0	1	0	0
Sinusitis	0	5	0	0
UTI	0	6	0	0
UTI, APD, Diabetes Mellitus	1	0	0	0
UTI, Bronchitis	0	1	0	0
UTI, Cholecystitis, Gall Stones	0	0	1	0
UTI, Diabetes Mellitus, Arthritis	0	1	0	0
UTI, Gastritis, Depression	0	0	0	1

Table 4: Distribution of diseases into seven Biological systems

Systems of the body	**Blood Humor N=34**	**Phlegm Humor N=40**	**Yellow Bile Humor N=14**	**Black Bile Humor N=12**
Nervous System	06	04	02	11
Endocrinology	14	04	00	02
Blood and Cardiovascular System	15	06	07	03
Gastrointestinal and Hepatobiliary system	03	06	10	08
Respiratory system	08	22	00	00
Urogenital system	04	14	04	02
Musculoskeletal system	04	03	05	07

In this study total 100 patients were registered as shown in the Performa in which different disorders with dominant temperament and dominant body humor were evaluated on the basis of set parameters.Therefore, total number of sanguineous patients with dominant blood humor in the body was 34 while total numbers of phlegmatic patients with dominant phlegm humor were 40. Whereas the total number of choleric patients with dominant yellow bile humor is 14 and the total number of melancholic patients with dominant black bile humor were 12 experiential. All patients were registered with multiple disorders (as shown in case summary). In this study seven biological systems were recognized and categorized as: Nervous system, Endocrinology

system, Blood and cardiovascular system, Respiratory system, Gastrointestinal and hepatobiliary system, Urogenital system and Muscoskeletal system.

The disorders of the above mentioned systems were observed in patients with different temperaments such as; sanguineous, phlegmatic, choleric and melancholic temperaments and their associated dominant humors such as; blood, phlegm, yellow bile and black bile were correlated. The laboratory investigations of the patients enrolled were also carried complete blood count (CP), erythrocyte sedimentation rate(ESR), liver function tests (LFT), lipid profile, random blood sugar (RBS), fasting blood sugar (FBS), serum urea, uric acid and creatinine and urine D/R values were obtained. In this way variations in the different components of the blood and urine in different diseases with different temperaments and humors were assessed.

4. CONCLUSION

This study exhibited that humoral theory postulates that body composed of four humors such as blood, phlegm, bile and black bile. These humors contain active and passive qualities i.e. hot, cold, dry and moist which constitutes the temperaments of humors. It is concluded that these four humors are cardinal fluids of the body and other fluids, biochemical constituents, cells, pigments comes under these humors. The balanced proportion and mixing of these fluids and their qualities constitutes general health. On the contrary improper proportion and irregular distribution of humors results in disease. It means that the quantity, quality and normal proportion of the biochemical constituents and the vital fluids of the body make up the humors and these humors are responsible for states of health and disease of the body. This research oriented exercise is beneficial for the suspected diseases of patient co-related with their humors. As a result of these, physicians can treat the patient effectively and easily in shortest possible time. Also it is helpful as preventive measures as well it ensures the complete restoration of health.

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