

Temperament of Drugs in Unani Medicine

A Critical Analysis

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Introduction

Mizaj (temperament) is one of the main basic fundamental principles of *Ilmul-Advia* (pharmacology) of Unani system of medicine. There exists a concept that all the three natural sources of drugs (*mawaleed-e-salasa*) possess four qualities in different proportions, i.e. *hararat* (heat), *buoodat* (cold), *yaboosat* (dryness) and *rutoobat* (moisture); and a new *Mizaj* is formed by their inter-action. The dominant property (*kaifiyat-e-ghaliba*) which finally prevails is called as *Mizaj-e-advia* constitution of the drug or temperament.

The *Mizaj* of drug is thus expressed in term of four *kaifiyat* (qualities) i.e. *har* (hot), *barid* (cold), *yabis* (dry) and *ratab* (moist). These qualities signify particular meanings when attributed to drugs (Ahmad, 1980). Ibn Sina says that “whenever we say a thing to be *har* (hot) or *barid* (cold), we never mean that it is *bi'l-fi'l* (actually) hot or cold (i.e. it feels hot or cold on touching) but we actually mean that the thing is *bi'l-quwa* (potentially) hot or cold. And further we mean that it is potentially hot or cold in comparison to our body” (Ibn Sina, 1930). The *quwwat* (potency is developed inside the body), when is functionally affected by *hararat ghariziyah* (innate heat) of the body and has actually (*bi'l-fi'l*) developed in the body. The four qualities actually meant that when a drug is taken and is reacted with the *Akhlat* and *Rutoobat* (humours) and with *hararat ghariziyah*, i.e. with the biological systems, it produces certain signs and symptoms which are attributed to heat, cold, moistness or dryness (Ahmad, 1980).

The concept of *Mizaj-e-advia* and its grading is based largely on the philosophical and logical evidences and to some extent on the experiences of Unani scholars. Many shortcomings are revealed on a thorough analysis of the Unani literature, as some scholars have reduced the concept of *Mizaj* to merely philosophical deductions and thereby indirectly affected the progress of the system. Here we would like to quote the views of a famous Unani scholar, Hakim Kabiruddin, from the preface of his book *Tarjuma-e-Nafeesi*, as he says – “but among the grading of the drugs, in spite of lot of difference in views, I have followed them totally, because I could not yet reach to any final conclusion. And in spite, that my doubts are not cleared yet; my inner sense has not come to the conclusion that there is no benefit of grading of drugs in our methodology of treatment” (Kabiruddin, 1924).

Naturally occurring *mufraad* (single) drugs are composed of organic and inorganic ingredients having diverse qualities and functions. Some are active and more potent and some are less active and they sub-serve many functions. Sometimes an ingredient enhances the action of other ingredient; hence it performs synergistic action. While sometimes an ingredient counteracts the deleterious effect of another (potent) medicinally active ingredient and therefore, the toxic effects of the drug are minimized if taken as in a crude form and thus that ingredient acts as a *Musleh* (corrective). All different ingredients of a drug have different *surat nau'yah* (molecular structures) and therefore, their *Mizaj* (temperaments) are also different. When the compounds of different temperaments assemble together in a particular drug, there develops one resultant temperament in the natural compound (*murakkab*) which is the sum-total of all the temperaments. The temperaments of active ingredients dominate and because of (the dominant)

temperament, the properties of one drug differ from those of another. If there are more than one active ingredients (*ajza'-e-fa'alah*) of diverse properties and functions, the drug is known as *Murakkab al-quwa* (multi-potency drug) (Ahmad, 1980).

Categories of Mizaj-e-Advia

According to the dominance and different proportions of basic properties, the temperament of drugs is divided into nine categories.

1. *Mo'tadil* (normal)
2. *Har mo'tadil* (normal dominated by heat)
3. *Barid mo'tadil* (normal dominated by cold)
4. *Yabis mo'tadil* (normal dominated by dryness)
5. *Ratab mo'tadil* (normal dominated by wetness)
6. *Har ratab* (hot and moist)
7. *Har yabis* (hot and dry)
8. *Barid ratab* (cold and moist)
9. *Barid yabis* (cold and dry)

Grades of Mizaj-e-Advia

The categories of different temperaments of drugs are further assigned four *darajat* (grades), according to their severity of basic *kaiifiyaat* (properties):

1. *Darjah awwal* (first grade)

The drugs of first grade are very mild in action and in low doses their effects are not felt externally and their heavy doses or prolong administration produce little change but do not disturb the body functions at all. Their effects remain confined up to the *arwah-e-majari* (vital force circulating in vessels) and does not go beyond that internally (Hakeem, 2002).

2. *Darjah doem* (second grade)

These drugs are moderate in action and their effects are felt after administration of the first (therapeutic) dose. In heavy doses or on prolong administration, they do not produce any adverse effect or disturbance. Their effects go beyond *arwah-e-majari* (vital force circulating in vessels) and remain (active) up to the *akhlat* (humours) of the body (Hakeem, 2002).

3. *Darjah soem* (third grade)

The drugs of third grade are strong in action, their side effects are felt and seen after administration of their first dose. In heavy doses, even for a short duration use, they may produce sometimes severe adverse effects but are not fatal. From *arwah-e-majari* and *akhlat* their effect goes up to the *rutoobat-e-saniyah* (secondary fluids or metabolites) (Hakeem, 2002).

4. *Darjah chaharum* (fourth grade)

These drugs are comparatively more potent and usually poisonous in action and could be fatal on their first dose. They are not used without *amal-e-tadbeer* (process of mitigation or purification). Affecting *arwah-e-majari* (vital force in the vessels), *akhlat* (humours) and *rutoobat-e-saniyah*, their effect reaches all organs of the body (Hakeem, 2002).

Each of the above grades of *Mizaj-e-advia* is further subdivided into three sub-grades each. For example, a drug would be hot or cold in the *awwal* (initial), *wast* (middle) or *akhir* (end) sub-grades of the first grade (Hakeem, 2002).

Determination of Mizaj and Its Grades

The four qualities, i.e. *hararat* (heat), *buroodat* (cold), *yaboosat* (dryness) and *rutoobat* (moisture/wetness) are

assigned to the drugs because of their actions in the normal body. The *har* (hot) drugs interact with the *hararat-e-ghareezi* (innate heat) in the body and produce heat, while *barid* (cold) drugs suppress the heat. The *yabis* (dry) drugs produce dryness or suppress the fluid secretions, while the *ratab* (wet) drugs increase fluidity/moisture in the body and remove dryness. However, a drug that enters a body of normal constitution and interacts or get affected by *hararat-e-ghareezi* but neither create any change in the real constitution nor disturb the function of *arwah* (vital force) and *quwa* (faculties) is called as *Mo'tadil* (normal) drug.

To determine the grade of *Mizaj*, a drug should be given once in its therapeutic dose and should not be administered repeatedly. The drug should also be tested in a moderate season and on a normal healthy human body.

Mizaj of Compound Formulae

According to Unani scholars, the *Mizaj* of a compound formulation is the sum total of the temperaments of all single constituents (Ahmad, 1980). The British writer Campbell (1926) quotes the method of Al-Kindi (d. 873 C.E.) regarding the determination of *Mizaj* of a compound formula (Table 1), which is described here. In this method Al-Kindi has calculated the final *Mizaj* of formula as dry to the first grade. As in the sum the warm and cold are neutralized with each other; the moist 3 is then deducted from the dry 6 that gives final value as dry 3 that is further divided by the number of drugs (4), that gives a figure of 0.75 that may be considered as one (1) and that is finally Dry¹.

Table 1
Determination of Mizaj of a Compound Formula

Cardamom	Warm ¹	Cold ^{1/2}	Moist ^{1/2}	Dry ¹
Sugar	Warm ²	Cold ¹	Moist ¹	Dry ²
Indigo	Warm ^{1/2}	Cold ¹	Moist ^{1/2}	Dry ¹
Embelica	Warm ¹	Cold ²	Moist ¹	Dry ²
Sum	Warm 4 ^{1/2}	Cold 4 ^{1/2}	Moist 3	Dry 6

Concepts Requiring Attention

It has been observed that the temperament mentioned against a sufficient number of drugs are far from being correct and the temperaments of those drugs which are believed to be correct have never been confirmed in the laboratories. It could have been a matter of priority for the post graduate research departments in *Ilmul-Adviyah* (pharmacology) and the councils of research to take this aspect in their research programs and establish the temperaments of various drugs on the basis of scientific parameters. But unfortunately, as yet there are no established scientific guidelines for undertaking research study in this matter. The modalities are to be fixed by the teachers and research guides themselves which is rather an up hill task. Therefore they chose to establish the temperaments of drugs through philosophical deductions which have much more extensibility to befool any one (Ahmad, 1980).

The above ideas are of a teacher of Unani system of medicine, that he has proposed twenty seven years back. But it is a sad matter that no one from the Unani fraternity has attempted to even think in this direction. How the system could progress until the basic concepts are lying remained untouched and frozen.

The dose of any drug should be determined according to both: its therapeutic effects and *Mizaj* but it appears that the Unani scholars have not taken care of both aspects in fixing the grades of *Mizaj*. It is frequently observed that the drugs belonging to the same *Mizaj* and grade are being recommended in different doses. A thorough study reveals that the allocation of *Mizaj* and its relation with the dose and effect of the drug have appeared differently in the standard Unani texts and there is lot of confusion in this regard. Some limited examples are discussed in this paper just to bring the attention of the present system of Unani medicine to find suitable solutions for the same.

If we take example of *Mo'tadil* drugs, it is considered that these drugs do not produce any significant effect on a normal body, then how can they be called as drug? How can they produce any effect in the patients? And by

which parameter can it be proved that any drug is *Mo'tadil*? The doses of different *Mo'tadil* drugs are also different (Table 2), though they should be equal, considering that the drugs of same temperament could have similar effects. The drug is defined as "a medicinal substance used in the treatment of disease". It may also be defined as a substance which acts by its *Kaifiyat* (quality). The *Mo'tadil* drug has no *Kaifiyat* then how it can produce any effect? The variation in the doses of *Mo'tadil* drugs goes up to 250 to 300 times higher doses in comparison to other drugs of the same temperament, e.g. the dose of *Marwareed* (pearl) is 30-60 mg, while the dose of *Bihi Sheerin* (*Cydonia oblonga*) is 10-50 gm (Kabiruddin, 1937). Such variations pre-required to be addressed.

TABLE 2
Doses of the Drugs Possessing Different *Mizaj* (Temperament)

S.No.	Name	Scientific name	Temperament	Dose
1.	<i>Bihi Sheerin</i>	<i>Cydonia oblonga</i>	Normal	10-50 gm
2.	<i>Gudhal</i>	<i>Hibiscus rosa-sinensis</i>	Normal	5-7 gm
3.	<i>Shakr-e-teghal</i>	Secretion of <i>Teghal</i>	Normal	1-2 gm
4.	<i>Yaqoot</i>	Red Ruby	Normal	125 mg
5.	<i>Tila</i>	Gold	Normal	30-60 mg
6.	<i>Marwareed</i>	Pearl	Normal	30-60 mg
7.	<i>Karela</i>	<i>Momordica charantia</i>	Hot ³ Dry ³	10-20 gm
8.	<i>Asgandh</i>	<i>Withania somnifera</i>	Hot ³ Dry ³	3-5 gm
9.	<i>Suhaga</i>	Borax	Hot ³ Dry ³	500 mg
10.	<i>Azaraqi</i>	<i>Strychnos nux-vomica</i>	Hot ³ Dry ³	60-250 mg
11.	<i>Miss</i>	Copper	Hot ³ Dry ³	15-30 mg
12.	<i>Suranjan Talkh</i>	<i>Colchicum luteum</i>	Hot ³ Dry ³	125-375 mg
13.	<i>Rai</i>	<i>Brassica nigra</i>	Hot ⁴ Dry ⁴	1-3 gm
14.	<i>Farfiyoon</i>	<i>Euphorbia antiquorum</i>	Hot ⁴ Dry ⁴	250-500 mg
15.	<i>Heera Kasees</i>	Ferrous sulphate	Hot ⁴ Dry ⁴	60-250 mg
16.	<i>Maghz Jamal Gota</i>	<i>Croton tiglium</i>	Hot ⁴ Dry ⁴	60-125 mg
17.	<i>Beesh</i>	<i>Aconitum napellus</i>	Hot ⁴ Dry ⁴	15-30 mg
18.	<i>Sammul-far</i>	Arsenic	Hot ⁴ Dry ⁴	1-5 mg
19.	<i>Tukhm-e-Imli</i>	Seeds of <i>Tamarindus indica</i>	Cold ³ Dry ³	20-40 gm
20.	<i>Post-e-Turanj</i>	Rind of <i>Citrus medica</i>	Cold ³ Dry ³	3-5 gm
21.	<i>Tabasheer</i>	<i>Bambusa arundinacea</i>	Cold ³ Dry ³	1-2 gm
22.	<i>Barg-e-Bhang</i>	Leaves of <i>Cannabis sativa</i>	Cold ³ Dry ³	1 gm
23.	<i>Bazrul-banj</i>	<i>Hyoscyamus albus</i>	Cold ³ Dry ³	500 mg-1 gm
24.	<i>Kafoor</i>	<i>Cinnamomum camphora</i>	Cold ³ Dry ³	125-375 mg
25.	<i>Afiyoon-e-Kahoo</i>	<i>Lactuca sativa</i>	Cold ⁴ Dry ⁴	20-40 gm
26.	<i>Afiyoon</i>	<i>Papaver somniferum</i>	Cold ⁴ Dry ⁴	30-125 mg
27.	<i>Dhatura</i>	<i>Datura alba</i>	Cold ⁴ Dry ⁴	15-60 mg
28.	<i>Almas</i>	Diamond	Cold ⁴ Dry ⁴	15-30 mg

(Kabiruddin, 1937)

Among the hot³ and dry³ grade drugs, the difference of doses goes even up to 600 to 700 times higher within the same grade of *Mizaj*, e.g. the dose of *Kaf-e-Dariya* (cuttle fish bone) and *Mis* (copper) is 15-30 mg, while the dose of *Karela* is 10-20 gm. The difference goes up to 150 to 300 times greater within the doses of the drugs having cold³ and dry³ grade temperament, e.g. the dose of Camphor (*Cinnamomum camphora*) is 125-375 mg, while the dose of *Tukhm-e-Imli* (seeds of *Tamarindus indica*) is 20-40 gm. Among the hot⁴ and dry⁴ grade drugs, the difference of doses goes even up to 600 to 1000 times higher within the same grade; e.g. the dose of *Samm-ul-far* (arsenic) is 1-5 mg, while the dose of *Rai* (*Brassica nigra*) is 1-3 gm. The difference is higher, i.e. 1300 to 1400 times, within the doses of drugs possessing cold⁴ and dry⁴ grade temperament, e.g. the dose of *Afiyoon* (opium – *Papaver somniferum*) is 30-125 mg while the dose of *Afiyoon-e-Kahoo* (Lettuce opium) is 20-40 gm. (Kabiruddin, 1937).

It has been observed that the *Mizaj* of the same drugs is described differently by the authors of different texts. For example, Mohammad Husain in his *Makhzan-ul-advia* (Husain, 1771) described the *Mizaj* of *Parsiyaoshan* (*Adiantum capillus-veneris*) as normal inclined towards heat and dryness; while Najmul-Ghani quoted opinion of ancient Unani scholars regarding the *Mizaj* of the same drug in the following words – “According to Galen it is normal in heat and cold; according to Ibn Sina it is inclined towards heat with very less dryness; while in the opinion of Al-Razi it is hot and dry in the first grade. Some other scholars say that its heat reaches up to second grade” (Najmul-Ghani, 1926).

The *Mizaj* of *Khyar-shamber* (*Cassia fistula*) is described as hot¹ and moist¹ grade by Mohammad Husain (Husain, 1771). He did not clarify the part of the plant to which the said *Mizaj* is assigned. According to Najmul-Ghani, the *Mizaj* of the pulp of *Khyar-shamber* is hot¹ and moist¹; he also says that according to some scholars it is hot² and moist² but in the opinion of Ibn Sina it is normal in heat and cold and moist. According to others it is cold¹ and moist¹ (Najmul-Ghani, 1926).

It has also been observed that the *Mizaj* described are not in accordance with the therapeutic actions of the drugs, e.g. *Asgand* (*Withania somnifera*) is described as hot³ and dry³ and its action as *musakkin-e-a'sab* (nervine sedative) (Kabiruddin, 1937). Its name itself suggests its action and cold nature (*somniferum* = to induce sleep), then how it could be categorized in the hot drugs?

It is one of the basic fundamentals of Unani medicine that the determination of *Mizaj* and its grades can only be assessed by the prescribed dose but there is no parameter for the determination of “First Prescribed Dose (F.P.D.)”. We are not sure, nor can we admit confidently that the dose of any given drug is very correct or appropriate.

This type of difference in opinion of the scholars create lot of confusion amongst researchers and clinicians because any change in *Mizaj* would also change effects of the drug. Therefore standardization of the grades of *Mizaj* is essential for laying down a foundation for further experimentation or clinical research as per Unani concepts with regard to natural drugs.

Suggestions and Proposals

As there are many irregularities found in the grading of the *Mizaj* of Unani drugs, it therefore seems justified to mention that the determination of *Mizaj* and its grade should not depend upon the dose and *kaifiyat* of the drug but it should be decided on the basis of the pharmacological effects of the drug. The dose should be determined on the basis of the effects, *Mizaj* and grades. It is also considerable that the proportion of active ingredients in the crude drugs may be variable and thereby effects of the drugs could change with different doses of the same drug and hence the drug of any particular temperament could show variable effects at different doses. Then how could we determine the temperament on the basis of the dose of the drug? Hence once again it may be realized that fixing temperament on the basis of the active ingredients and their effects is justifiable and should be done involving proper parameters of relevant research methodology.

There should be a clear-cut line of demarcation for each quality, *Mizaj*, grades and sub-grades in relation with doses, e.g. this drug is hot and dry in third grade, in its first sub-grade and it should be given in this (particular) dose range. The doses could be determined according to their natural sources i.e. plant, mineral and animal origin etc. For example, if an animal origin drug is hot³ and dry³ in its first sub-grade then the dose range shall be this much and if in the second sub-grade, the dose range shall be that much etc. On the contrary, if a mineral drug is hot³ and dry³

in its first sub-grade, the dose range shall be this much, that may be similar or different from the prescribed range of the animal origin drugs. The terms like 'Mo'tadil' drugs should be excluded from literature. The doses should also be mentioned in relation to the body weight and their timings should be mentioned and followed in general practise.

It is very interesting that Hakim Syed Ishtiaq Ahmed of Delhi had proposed that the temperament of drugs should be investigated by taking temperature and B. M. R. of the individuals using most sensitive instruments before and after administration of the drug. He suggested that the process should be repeated for a week or ten days. The protein-bound iodine (P.B.I.) should also be measured. He stated that the subjective feelings of the individuals should be carefully noted and signs should be carefully observed. The symptoms pertaining to the sympathetic and parasympathetic nervous system should also be observed. A thorough examination of *Mizaj* should be carried out by the assessment of *Ajnas-e-'ashrah* (ten principles). Then the signs and symptoms should be correlated with the signs and symptoms fixed for each quality. The subjects included in the study should be *Mu'tadil* (equable or normal) in temperament and healthy, otherwise the chances of error would be increased. He also suggested that the experiments for *Mizaj* of the drugs those are in clinical use since thousands of years should not be conducted on laboratory animals. Because there is a vast difference in human and animal temperament and their results can never be relied upon. However the animals can be chosen to gain the first hand knowledge pertaining to a new drug which has not yet been used on human subjects for clinical purposes (Ahmad, 1980).

There should be a concrete guideline and parameters for grading *Mizaj* and doses and the old system should be reviewed and made error free. It is possible through repeated reviews and meetings of the subject experts, under provision of any research project undertaken by any government approved institution of Unani System of Medicine. The post graduate institutions as well the Central Council for Research in Unani Medicine should be involved in this research task to modify and correct the irregularities happening since long time and establish the evidence-based Unani system of medicine that would be acceptable to the global community.

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