

A Consultation System Integrating Chinese Medical Practice in Herbaltherapy, Acupuncture and Acupressure

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Abstract The paper presents an informatic system offering the acupuncturist, herbalist and acupressurist a rich source of clinical information. It adapts the theory of Chinese Medicine to Western medical practice and is solidly based on the ancient Chinese classics.

The system provides an orientative diagnosis starting from the clinical picture of the patient consisting in syndrome differentiation. Based on the *Yin-Yang* and *5 Elements* theory the remedy associated with the energetic imbalance is determinated. Then the tastes, nature and tropism implied by the principle of treatment are used to prescribe the herbal treatment. The treatment variants through acupuncture and acupressure are also indicated. The system is also useful in teaching Chinese Medicine.

Introduction

Chinese medicine modalities play a larger role in the self-health care of citizens than previously understood. Despite the broad use of alternative medicine treatments, there is a paucity of data available to demonstrate convincingly whether these practices are efficacious, safe and beneficial, lead to positive clinical outcomes, improve the quality of life, reduce or eliminate adverse symptoms, prevent disease or enhance health. New findings in alternative and complementary medical research challenge conventional knowledge and reconnect us with the wisdom of our ancient heritage.

The central aim of our research is the design and implementation of a consultation system in Chinese Traditional Medicine. The main objectives pursued have been:

1. the choice of the quintessential trait of Chinese Medicine in diagnosis and therapy;
2. the use of the abundant resources of flora in the world;
3. the use of the information in the data bases for medical training.

Diagnosis assistance

Chinese diagnosis is intimately related to Pattern Identification as it provides the diagnostic tools necessary to identify the patterns. The correlation between outward signs and internal organs is summarized in the expression: "Inspect the exterior to examine the interior". The second fundamental principle of Chinese diagnosis is that "a part reflects the whole". Chinese pulse[1] or tongue[2] diagnosis are striking examples of this. Chinese diagnosis

includes four methods traditionally described in four words: looking, smelling, asking and feeling. The symptoms are split in to 32 groups that include observation of elements such as: spirit, body, demeanor, head and face, eyes, nose, ears, mouth, teeth-gums, throat, limbs, skin, tongue, pulse, sweating, stools and urine, sleep, pain etc. Each group is assigned a weight. The main symptom groups are those referring to pulse and tongue, which for this reason are assigned the largest weights. The algorithm counts for each syndrome and each symptom group of the syndrome the proportion of symptoms found in the patient and uses these figures and the group weights to calculate the score of the syndrome.

The *diagnosis* algorithm allows the calculation of a score for each of the 170 syndromes among which the system seeks to differentiate. A list of syndromes is constructed in decreasing order of the scores thus calculated. The top of the list displays the most likely syndromes for the patient examined (Figure 1).

Figure 1 Diagnosis assistance

Determination of the energetic imbalance of the patient, used for syndrome differentiation, allows the indication of different variants of *treatment* based on: Herbaltherapy, Acupuncture and Acupressure.

Herbaltherapy

The Five Elements Law

Herbaltherapy is a vast subject in Chinese Medicine and it is based on the *5-Element model*.

Together with the theory of Yin-Yang, the theory of the 5 Elements constitutes the basis of Chinese medical theory. Chinese Medicine observes Nature and, with a combination of the inductive and deductive method, sets out to find patterns within it and, by extension, apply these in the interpretation of disease.

Each herb has a certain taste which is related to one of the Elements and other correlation and features of it can be established, as are illustrated in Figure 2. The five tastes are: sour for *Wood*, bitter for *Fire*, sweet for *Earth*, pungent for *Metal*, salty for *Water* [3]. Thus, if an organ is diseased one should avoid the taste related to the Element that controls that organ. Because the herbs have a more definite and somewhat less "neutral" effect than acupuncture the possibility of ill effect arising from a wrong treatment is greater. Thus it is essential to

distinguish between the nature of the herbs, which can be: hot, cold, lukewarm, cool, neutral.

COMPAC					
THE 5 ELEMENTS LAW					
FEATURES	WOOD	FIRE	METAL	WATER	
YIN ORGANS	Liver	Heart	Spleen	Lungs	Kidneys
YANG ORGANS	Gall-Bladder	Small Intestine	Stomach	Large intestine	Bladder
SENSE ORGANS	Eyes	Tongue	Mouth	Nose	Ears
OUTSIDE	Nails	Face	Lines	Skin	Hair
TISSUES	Sinews	Vessels	Muscles	Skin	Bones
EMOTIONS	Anger	Joy	Benignity	Sadness	Fear
CATEGORIES PSYCHIC	Soul, Hun	Heart, Shen	Mind, Yi	Spirit, Po	Willpower
ENERGY QI	Defensive Wei Qi	Mind Shen Qi	Protective Ying Qi	Exogenous Qi	Gathering
HUMOUR	Tears	Sweat	Saliva	Sputum	Urine
ANCIENT POINT YIN	Jing distal	Ying	Shu Yuan	Jing proximal	He
ANCIENT POINT YANG	Shu	Jing proximal	He	Jing distal	Ying
SEASONS	Spring	Summer	Autumn	Winter	
DIRECTIONS	East	South	West	North	
PATHOGENIC FACTOR	Wind	Heat or Fire	Dryness	Dampness	Cold
COLORS	Green	Red	White	Yellow	Black
TASTES	Sour	Bitter	Sweet	Pungent	Salty
GRAINS	Wheat	Beans	Rice	Hemp	Millet
DOMESTIC ANIMALS	Sheep	Fowl	Pig	Dog	Goat
STAGE OF DEVELOPMENT	Birth	Growth	Transformation	Harvest	Storage
Physiological relationship		Pathological relationship		Exit	

Figure 2 The 5 Elements Law

Beside the place of action of the herb, named also tropism and represented by the channels affected, taste and nature determine the herb which can be used for a syndrome [4].

Remedy determination

Based on the treatment principle, associated with the determined syndrome, a phytotherapeutical remedy is indicated, and also a subremedy in certain cases.

COMPAC

Syndroms

SYNDROMS

STOMACH - FIRE

LIVER FIRE - BLAZING UPWARDS

LIVER FIRE - INSULTING THE LUNGS

PHLEGM - FIRE HERASSING THE HEAT

COLD

COLD INVADING THE STOMACH

ASSOCIATED SYMPTOMS

Agitation

Bitter taste

Constipation

Incoherent speech

Redder facies

Restlessness

Sour taste

TREATMENT - ACUPUNCTURE

PRINCIPLE

Clear Heart - Fire

Resolve Phlegm

TREATMENT

SV5, H8, GV14, GV26

Aleccions

Remedies

Exit

Figure 3 Integration of the three methods of treatment

Each remedy has associated tastes, natures and tropism. Tastes has a certain effect on the body: the *sour* taste generates fluids and Yin (it is astringent and can control perspiration

and diarrhoea), the *bitter* taste clears Heat, sedates and hardens (it clears Damp-Heat and it subdues rebellious Qi), the *sweet* taste tonifies, balances and moderates (it is used to tonify deficiency and to stop pain), the *pungent* taste scatters (it is used to expel pathogenic factors), the *salty* taste flows downwards, softens hardness (it is used to treat constipation and swelling).

After the interpretation of the treatment principle for the syndrome (Figure 3) and of the features already discussed for remedies, the useful herbs are indicated [5].

The system includes the European medicinal plants (equivalent to Chinese plants), classified on the basis of traditional Chinese principles. The integration of herbaltherapy implies the correlation of medicinal herbs, used in treatment, with syndrome differentiation, based on taste, nature and tropism (Figure 4).

The screenshot shows a software window titled 'COMPAC' with a sub-header 'PHYTOTHERAPY'. The main content area is titled 'SYNDROM: PHLEGM FIRE - HERASSING THE HEAT'. It contains several interactive elements:

- A list box with three items: 'Remedy which clears the Heat', 'Remedy which clears orifices', and 'Remedy - calming down the liver'. Each item has a '+' button to its right.
- A large empty text box below the list box.
- Three small tables for 'Nature', 'Taste', and 'Tropism':

Nature	
Cold	<input type="checkbox"/>
Heat	<input type="checkbox"/>
Neutral	<input type="checkbox"/>

Taste	
Pungent	<input type="checkbox"/>
Bitter	<input type="checkbox"/>

Tropism	
H	<input type="checkbox"/>
SP	<input type="checkbox"/>
L	<input type="checkbox"/>
- A list box containing three herb names: 'Acorus calamus', 'Styrax benzoin', and 'Cinnamomum camphora'. Each item has a '+' button to its right.
- The text 'obligeana' is displayed below the herb list box.
- An 'Exit' button is located at the bottom center of the window.

Figure 4 Herbaltherapy

Acupressure

Acupressure is a simple technique, which can be applied in self-therapy, following the same rules that were described thousands of years ago for acupuncture. Acupressure is similar to acupuncture, the only difference being that the fingertip is used instead of needles [6]. Based on the same syndrome differentiation, pushing the button "Affections", causes the system to display the allopathic affections, implied by the identified syndrome and information referring to the points indicated for the treatment, supplemented with further information that must be taken into account in the case of the given treatment.

Acupuncture

The establishment of the diagnosis is followed by the indication of the point formula and therapeutic principle [7].

The traditional Chinese chronoacupuncture methods Tzu Wu Liu Chu Liao Fa and Ling Kwei Ba Fa [8] can also be used in the establishment of the point formulae, allowing optimization depending on the opening times.

Based on one of the most important principles of acupuncture, that of considering the patient as a whole, the treatment can also be established using microsystems [9]:

- reflexology - the plantar reflexogen areas and the reflexogen areas of the upper and lower limbs, and the organs corresponding to them, are displayed;
- auricular therapy - the treatment of diseases by the stimulation with needles of points located on the ear.

Training

The system can also be used for *training*. It provides detailed information about: channels, points, "The 5 Elements Law" [10], syndromes associated symptoms and the recommended remedy, pulsology (following BOSSY and BORSARELLO), tongue examination, remedies and the associated plants .

Implementation

The system has been developed in FoxPro for WINDOWS and C++. The system is used by means of menus, being easily operable, and a powerful help facility is provided. The system has been installed and is being tested at the Institute for Postgraduate Studies in Medicine and Pharmacy and in other clinics in Romania. The performance has been assessed by analyzing how often the diagnosis module generated diagnoses identical to the opinion of the clinicians.

Conclusions

Non-drug therapy becomes more important with the accumulation of evidence of toxic and other side effects of drugs. In this context, herbaltherapy, acupuncture and acupressure begins to receive growing attention, since they have efficient and harmless results.

The system offers the advantage of providing a lot of information in a short time, contributing to the diagnosis and therapy in this domain. Also, the system can be used as a tool for medical training.

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