

## EDITORIAL

### OF ROOTS, BARKS, PARACETAMOL AND EDTA

Abdul Hamid Abdul Kadir

Orthopaedic Surgeon, Assunta Hospital Petaling Jaya, Selangor, Malaysia

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Traditional native medicine has existed throughout the world from time immemorial. Early humans had sought cures for illness by using plants, animal parts, and mineral and as a species have survived. It can even be said that the forest, the home to our forebears, served as a veritable pharmaceutical depot as well. Physical evidence of use of herbal remedies goes back some 60,000 years to a burial site of a Neanderthal man uncovered in 1960 (1)

The Penans in Sarawak even today scoff at visitors bringing along paracetamol and anti-diarrhoeals when they go jungle trekking with them, saying that all the medicine they will ever need are in abundance around them : in the leaves and barks of trees.

All cultures have long folk medicine histories that include the use of plants. Even in ancient cultures, people methodically and scientifically collected information on herbs and developed well-defined herbal pharmacopoeias.

The World Health Organization (WHO) estimates that 4 billion people-80 percent of the world population-use herbal medicine for some aspect of primary health care (Farnsworth et al., 1985). Herbal medicine is a major component in all indigenous peoples' traditional medicine and is a common element in Ayurvedic, homeopathic, naturopathic, traditional oriental, and Native American Indian medicine.

The sophistication of herbal remedies used around the world varies with the technological advancement of countries that produce and use them. These remedies range from medicinal teas and crude tablets used in traditional medicine to concentrated, standardized extracts produced in modern pharmaceutical facilities and used in modern medical systems under a physician's supervision.

It would be appropriate to review some of these traditional medical practices.

#### **Traditional Chinese Medicine**

Chinese traditional medicine has a history of

thousands of years and is based on two doctrines: *yin* and *yang* and the Five Elements (metal, wood, water, fire and earth). In medicine everything is classified according to *yin* and *yang*. On the human body, the skin is *yang* and the interior is *yin*. The heart and liver are *yang* organs and the spleen, lungs and kidneys are *yin* organs. In the healthy state, the human body is made up of a harmonious mixture of the Five Elements.

The earliest Chinese records of illnesses, medicine and treatment were found inscribed on oracle bones (tortoise shells and animal bones) some three thousand years ago (Shang Dynasty: 1766 to 1122 BC), and would represent the earliest medical information.

The earliest written evidence of the medicinal use of herbs in China consists of a corpus of 11 medical works recovered from a burial site in Hunan province. The burial itself is dated 168 B.C., and the texts (written on silk) appear to have been composed before the end of the 3rd century B.C. Some of the texts discuss exercise, diet, and channel therapy (in the form of moxibustion).

The largest, clearest, and most important of these manuscripts, called by its discoverers Prescriptions for Fifty-Two Ailments, is predominantly a pharmacological work. More than 250 medicinal substances are named. Most are substances derived from herbs and wood; grains, legumes, fruits, vegetables, and animal parts are also mentioned. Underlying this entire text is the view that disease is the manifestation of evil spirits, ghosts, and demons that must be repelled by incantation, rituals, and spells in addition to herbal remedies.

Chinese herbal medicines are derived mostly from plants (ginseng roots, ginger rhizome, foxglove roots, chrysanthemum flower, cinnamon roots, garlic bulb to name a few) and also from animals, minerals and fungi. During the Han Dynasty (which ended in the 2<sup>nd</sup> century AD), 365 medicines were recognised. Today, there are more than 5000 Chinese

medicines and the *sinseh* will prescribe medicine according to their diagnoses, which includes an in-depth interview of the patient, as well as examination of the patient's pulse, smelling of the breath and inspection of the tongue.

By the later Han Dynasty (25-220 A.D.), medicine had changed dramatically in China. People grew more confident of their ability to observe and understand the natural world and believed that health and disease were subject to the principles of natural order. However, herbs still played an important part in successive systems of medicine. The Classic of the Materia Medica, compiled no earlier than the 1st century A.D. by unknown authors, was the first Chinese book to focus on the description of individual herbs. It includes 252 botanical substances, 45 mineral substances, and 67 animal-derived substances. For each herb there is a description of its medicinal effect, usually in terms of symptoms. Reference is made to the proper method of preparation, and toxicities are noted (2).

In Malaysia, the numerous licensed Chinese herbal medicine outlets in cities and towns testify to their popularity not only among ethnic Chinese, but also other races.

### **Ayurvedic Medicine**

Ayurvedic medicine, or Ayurveda, comprising treatments which are primarily dietary and herbal, is an "alternative" medical practice that claims it is the traditional medicine of India. *Ayurveda* is based on two Sanskrit terms: *ayu* meaning life and *veda* meaning knowledge or science. Ayurveda, the science of life, prevention and longevity is the oldest and most holistic or comprehensive medical system available.

The principal Ayurvedic book on internal medicine, the Characka Samhita, describes 582 herbs (3). The main book on surgery, the Sushruta Samhita, lists some 600 herbal remedies. Most experts agree that these written records are at least 2,000 years old.

Ayurvedic treatments are primarily of herbal origin (teakwood and bark, gooseberry, kurroa rhizomes, neem, etc.), and also require dietary habits. The metaphysical physiology of Ayurveda dictates when to eat and when not to eat spicy foods, sweet foods, honey, nuts, meat and dairy products.

Meditation is also a significant therapy in Ayurveda. Except for the benefits of relaxation and meditation, there is no scientific evidence to support any of the many astounding claims made on behalf of Ayurvedic medicine.

Ayurveda is said to have been practised for some 5,000 years, and in spite of its worldwide acceptance, what it considers to be knowledge or science may not coincide with the most updated information available to Western medicine. However, Ayurvedic medicine is recognised by WHO.

### **Bomohs**

Traditional healing in Malaysia is not limited to utilizing therapeutic, physical means or to prescribing a dose of medicine or herbs; it is a holistic approach that caters for the spiritual and psychological needs of patients, together with all other modes of treatment.

A folk medicine practitioner in Malaysia is called a *bomoh*, *dukun*, or *pawang* according to the period a student spends studying, and remains indispensable even today. The studies undertaken, which equip practitioners to prescribe proper medication to patients, cover the philosophy of life; therapeutic usages of herbs, metals, and animals parts; and the relation between the above disciplines and human beings and their lives. Folk medicine practitioners, especially the elders who are called *touks*, are treated with great respect, particularly in rural societies.

Knowledge of traditional healing is usually passed on from one member of the family to another, allowing them to practise folk medicine as a career or as a secondary occupation. The healer usually chooses a younger family member he deems most suitable to pass his knowledge to.

Bomohs start their education by studying the sciences of the *Shariah* (Islamic law), including jurisprudence, monotheism, and Sufism, which are necessary for the bomohs not only to practice but also to get the recognition of the Muslim communities in which they live; especially with the prevalence of Islamic awakening, these communities will not recognize bomohs who have no knowledge of medical-related *Shariah* injunctions, without which bomohs are bound to get entangled in superstition and trickery.

The bomoh's know-how must be seen on a positive note as it is based on a repository of knowledge that had expanded generations after generations. A major portion of the Malay medicine can be found in the 'tib' literature that provide the remedies for the ailments (4)

The bomoh uses some 4,000 extracts from herbs, animals, metals, and liquids. While some herbal remedies are available on the market and

ready for consumption, others are homemade; anyone with general knowledge of traditional medicine can prepare a few simple blends or medicinal solutions whose formulas are well known. Because of the trust patients place in their practitioner, they prefer getting their medication from him rather than buying it because he prepares it himself, sometimes in their presence.

The Malaysian herbal industry has grown in the Modern Age with the introduction of home-based and small commercial factories, as well as factories owned by big companies, which prepare medicines using cutting-edge technologies throughout the process, which includes the mixing, grinding or squeezing, and packaging of herbs. Some of these companies are renowned for using quality control methods and for testing their products before obtaining a permit from the Ministry of Health to market them.

On the other hand, some companies manufacture and sell their products without obtaining the Ministry's permission. These products can be effective, ineffective, or even harmful when manufacturers use unethical practices. Since there are remedies that cater for specific target markets such as single or married women, many manufacturers, driven by greed, use unethical practices to produce these remedies and promote them among city dwellers.

### **Homeopathy**

The early 1800's were a time of great transition in medicine. Whereas the standard, allopathic form of treatment was dominant at the turn of that century, there was renewed interest in traditional and alternative therapies. The two most popular alternatives to the orthodox practice were herbal medicine and Homeopathy.

Samuel Hahnemann, a German physician who lived around 1800, is credited with founding homeopathy, but the basic principles of homeopathy have been recorded in the history of numerous ancient and primitive peoples, from Asia to the Incas and Aztecs, to the Egyptians.

Homeopathy is one of the fastest-growing alternative medicines available today. By triggering the body's own self-healing abilities, homeopathic remedies are believed by its proponents to be a safe and effective way to treat everyday ailments as well as acute and chronic symptoms of mind and body (5).

### **Homeopathy rests on three principles:**

1. The Law of Similars which states that a disease should be treated by a medicine producing symptoms in a *healthy* person similar to those the patient is experiencing.
2. The use of a single medicine to treat *all* symptoms the patient is expressing - mental, emotional, and physical.
3. The use of a minimum dose. The homeopath first prescribes a small number of doses of the selected medicine. Then, after observation of the effects, a regimen of even *smaller* dosages is established.

Homeopathic medicines are indeed powerful tools but they are not effective in treating all diseased states. Some conditions do not respond to microdoses because they require surgical intervention, others require immediate and certain relief of symptoms, others are addressed by simple nutritional or lifestyle changes, still others are relieved only upon reduced exposure to certain environmental stresses - and then, there are those who don't experience improvement from homeopathic medicine for unknown reasons (5).

### **Regulatory Status of Herbal Medicine Worldwide**

Despite the importance of plant discoveries in the evolution of medicine, some regulatory bodies such as the U.S. Food and Drug Administration (FDA) - the main U.S. regulatory agency for food and drugs - consider herbal remedies to be worthless or potentially dangerous (6).

Despite FDA's skepticism about herbal remedies, a growing number of Americans are again becoming interested in herbal preparations.

Many fruits and vegetables are believed to have prophylactic and preventive properties on many common diseases and influence their intake by members of the public. The list is exhausting: blueberries, cabbage, cantaloupe, carrots, garlic, and oats are all believed to combat cancer; oats, garlic, artichokes, avocados and figs lower cholesterol; honey aids digestion and fights allergy, wheat germ and bran combat colon cancer, and the lowly onion combats cancer, reduces risk of heart attacks and lowers cholesterol.

Well into the 20th century much of the pharmacopoeia of scientific medicine was derived from the herbal lore of native peoples. Many drugs, including strychnine, aspirin, vincristine, taxol, curare, and ergot, are of herbal origin. About one-quarter of the prescription drugs dispensed by

community pharmacies in the United States contain at least one active ingredient derived from plant material (7).

### ***Chelation Therapy & EDTA***

Compared with these ancient traditional medicines in the treatment of diseases, so-called alternative treatment employing chelation and colonic washouts are indeed very recent.

Chelation therapy with EDTA first came into practice in 1960 in Europe and the USA, and in 1973 the American College for Advancement in Medicine (ACAM) was founded to focus primarily on the promotion of chelation therapy.

EDTA is the short form for Disodium Ethylene-diamine-tetra-acetic acid, the organic chemical (amino acid) which is commonly used in chelation therapy. Chelation therapy is a series of intravenous infusions containing EDTA which may be used to treat iron-load from multiple blood transfusions, lead poisoning and other heavy metal (mercury, copper, aluminium, nickel, cobalt, zinc, cadmium, manganese, magnesium and calcium) poisoning.

It must be stated at this juncture that heavy metal poisoning in the normal human population living in normal environment and consuming normal food is extremely rare. It is extremely rare in Malaysia.

EDTA, or its sodium salt, is a chelating agent, forming coordination compounds with most metal ions, such as calcium, magnesium or copper. Its industrial use is in determination of water hardness and as a water softener. It is also used in photography as a component of bleach-fix used to dissolve elemental silver produced during development. It is also used as a soil conditioner to allow some plants to grow in base rich soils.

In medical and laboratory practice EDTA is used as an anti-coagulant or anti-clotting additive. When blood is taken for tests from patients, EDTA is added to prevent the blood sample from clotting, by scavenging the calcium from the sample, to facilitate various tests to be carried out on the unclotted, whole blood.

After EDTA was found effective in chelating and removing toxic metals, like lead, from the blood, some scientists postulated that hardened arteries could be softened if the calcium in their walls was removed.

This formed the basis for claims that chelation therapy is effective against atherosclerosis,

coronary heart disease, and peripheral vascular disease. Its supposed benefits include increased collateral blood circulation, decreased blood viscosity, improved cell membrane function, decreased arterial vasospasm, decreased free radical formation, inhibition of the aging process, reversal of atherosclerosis, decrease in angina, reversal of gangrene, improvement of skin color, and healing of diabetic ulcers.

It is also claimed that chelation is effective against arthritis; multiple sclerosis; Parkinson's disease; psoriasis; Alzheimer's disease; and problems with vision, hearing, smell, muscle coordination, and sexual potency.

These claims have never been tested by scientific methods or found to be effective in the treatment of such a multitude of diseases.

Those who practise chelation therapy administer EDTA either through the intravenous route or in capsules taken orally.

There are instances to show that there indeed are early and late complications with chelation therapy, like the heavy loss in the urine of trace metals like zinc which has an important role in strengthening the body's immune function. Loss of large amounts of calcium through chelation is also believed to create loss of calcium from bone.

### ***Evidence-based Medicine***

On the other hand, the allopathic doctors, or registered medical practitioners, practise evidence-based medicine, by which is implied that the system of treatment of their patients is based on well-established and sound scientific studies and principles of therapeutics, and their efficacy to control, treat or modify diseases. The system of therapeutics so advocated can be, and is being practised safely universally with predictable results in the vast majority of patients.

The medications used by allopathic doctors are very specific for well defined disease conditions and the composition, use and adverse reactions are monitored by authorities established for such specific purposes. On any adverse reports, the products are quickly taken off the shelves.

Chelation therapy with EDTA would come under the category of complementary medicine because its widespread use by some registered medical practitioners is not what it had been used originally on evidence-based therapeutic criterion.

By prescribing various supplements, like large amounts of Vitamin C and several B vitamins during

chelation therapy for treatment of diseases for which they have not been proven to be effective or not conventionally used, or, in other words, where there has been no scientific evidence adduced for their effectiveness and efficacy in such diseases, registered medical practitioners are in fact practising complementary medicine.

### ***The Burden of Proof***

The onus to prove that chelation therapy, and other similar complementary medical practices, is a sound, repeatable system of therapeutics rests heavily on the proponents of complementary medicine. It is not enough to produce anecdotal testimony from patients.

Medical practitioners who treat their patients with chelation therapy would have to show scientific evidence that their patients have improved, not in the short term but more importantly, in the long term as well. It has to be scientifically proven that chelation could alter the progress of atherosclerosis, that occluded blood vessels could be cleared, that plaque deposits could be reduced, and that hardened arteries could be “softened.”

They have to produce carefully documented case reports with long-term follow-up, comparisons of angiograms or ultrasound tests before and after chelation, and data from autopsies of former patients.

It is reported that doctors practising chelation therapy have published no such data. The few well-designed studies that have addressed the efficacy of chelation for atherosclerotic diseases have been carried out by medical scientists in FDA, American Heart Association, American Medical Association, American College of Physicians, and the University of Calgary, to name a few.

Without exception, these studies by reputable bodies found no evidence that chelation worked.

There are many patients in Malaysia, who claim to have benefitted from chelation therapy and some of them have written testimonials and have volunteered to give evidence in person. Many others who have not benefitted remain silent sufferers. Because we do not hear from them in the media or in the courts of law, it does not mean that all patients who had undergone chelation therapy have recovered completely from their illnesses.

### ***Medical Act 1971***

To understand the practice by registered medical practitioners of complementary and

alternative treatments, one has to look first at the Medical Act 1971 and then at other supporting material on the subjects of allopathic and complementary medicine.

Section 34 (1) of the Medical Act 1971, in the subsection ‘Malay, Chinese, Indian or other native methods of therapeutics’, states:

“Subject to the provisions of subsection (2) and regulations made under this Act, nothing in this Act shall be deemed to affect the right of any person, not being a person taking or using any name, title, addition or description calculated to induce any person to believe that he is qualified to practise medicine or surgery according to modern scientific methods, to practise systems of therapeutics according to purely Malay, Chinese, Indian or other native methods, and to demand and recover reasonable charges in respect of such practice.”

In brief, the Act does not restrict any person from practising native/traditional/complementary medicine, so long as the person is not a medical practitioner registered under the provisions of the Medical Act 1971 (8).

Whether complementary and/or traditional medicine is included by definition in the “system of therapeutics according to purely Malay, Chinese, Indian or other native methods” is open to interpretation. However, it is common knowledge that those practising non-Western complementary system of therapeutics normally use both herbs and additionally some allopathic medications. The use of allopathic medications by such practitioners is in most instances for diseases and indications not usually or conventionally employed in the practice of evidence-based Western medicine.

The Medical Act 1971 has no jurisdiction over non-registered or non-medical persons who choose to practise complementary medicine or native medicine or traditional medicine.

But registered medical practitioners who practise such traditional or complementary medicine would clearly be misleading the members of the public, and presenting themselves as trained, registered and certified to practise all systems of therapeutics, thereby adding credibility to their practice.

The medical profession may view native medicine as one ancient remedy which may not possibly be subjected to the rigorous demands of scientific study and analysis to seek and obtain evidence base, and those who practise such medicine as not possibly registrable or be subjected to strict regulatory procedures. However, the same approach

cannot be taken with registered medical practitioners, trained in conventional Western medicine and bound by its fairly strict codes of professional conduct, who should deviate from such practice and treat their patients with native medicine. This is on the understanding that patients who come to a registered medical practitioner expect Western medicine, and should not be misled into believing that it is safe to take whatever native medicine that the good doctor prescribes.

No doubt there may be a place in the future for so-called integrative medicine, but let us not ignore the fact that even in the West and advanced countries where such practice is finding a niche, there is widespread opposition and anti-lobby and it cannot be dismissed simply as professional turf war. It is a question of what is established and proven system of therapy and what is not (9).

### ***Responsibility of the Ministry of Health***

The Ministry of Health is said to be “keeping an open mind” about the practice of complementary and traditional medicine in Malaysia. It is a fact that the Ministry and the Universities are currently looking into ways and means of regulating traditional and herbal medicine practice by analysing the hundreds of such medications being sold openly in this country. It is a multi-million dollar business and obviously the government has more than a passing interest in it.

Interestingly, there is a proposal by the Ministry of Health that traditional practitioners, like sinsehs, bomohs and ayurvedic physicians may be allowed in the near future to practise in government hospitals and patients may be allowed to choose either conventional Western medicine, or one or more of the above traditional medicine.

The Medical Act 1971 and the Code of Professional Conduct of the MMC clearly do not allow any professional association between registered medical practitioners and traditional practitioners, and it is hoped that this proposal by the government will not be carried through.

Members of the public have the right to choose whatever system of treatment they prefer for whatever reason, but it is also the mandated right of the Ministry of Health to set the standards of health care, and to demonstrate its duty and responsibility to point out to the public the various pitfalls in any system and the unpleasant consequences.

Failure to do so would be a failure to provide proper health care and to exercise social responsibility for the welfare and well-being of the Malaysian public.

### **Correspondence :**

Dr. Abdul Hamid Abdul Kadir MBBS(Singapore),  
FRCS(Edin), MChOrth (Liverpool)  
Orthopaedic Surgeon, Assunta Hospital Petaling  
Jaya, Selangor, Malaysia  
Tel: + 609-76807000  
Fax: +609-77832458  
Email: abdulhamid@assunta.com.my

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