Tibetan Medicine: An Effective Botanical Treatment for Peripheral Vascular Disease (PVD)

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Summary

The botanical formula Badmaev No. 28, which originated in Tibetan medicine, provides an instructive example of how a nutriceutical has evolved from an ancient concept into a contemporary application through scientific research. This developmental pathway has led to a standardized nutriceutical with clinically proven efficacy in the treatment of peripheral vascular disease (PVD). During the 1970s systematic scientific investigation begun in Switzerland and resulted in six double-blind clinical studies on the cardiovascular use of this formula. The formula’s mechanism of action has been described in Tibetan tradition, based on three groups of botanical and mineral ingredients: (1) main acting ingredients, (2) auxiliary ingredients, and (3) components that moderate the action of the first two groups and facilitate gastrointestinal absorption of the formula. Based on the preclinical, clinical and laboratory studies several mechanisms of the formula relevant to alleviation of the pathomechanism of PVD have been discussed; for example, increase in threshold for platelet aggregation, lowering total blood cholesterol level, lowering levels of low-density lipoproteins (LDL) while increasing levels of high-density lipoproteins (HDL), and prevention of lipid peroxidation. Also, recently performed studies have shown that the formula can exert actions as a biological response modifier by alleviating vascular inflammation. The latter mechanism may be particularly important in light of the inflammatory nature of atherosclerosis.

Riassunto


Il meccanismo d’azione della formulazione riportato dalla tradizione tibetana è basato sull’uso di tre gruppi di sostanze di origine botanica e minerale: (1) i principali ingredienti attivi, (2) gli ingredienti ausiliari, e (3) i componenti che moderano l’azione dei primi due gruppi facilitando l’assorbimento gastrointestinale della formula. Basandosi sui numerosi studi di laboratorio, studi pre-clinici e clinici vengono discussi i diversi meccanismi in grado di alleviare la patologia delle PVD; per esempio, l’incremento della aggregazione piastrinica, l’abbassamento dei livelli globali di colesterol-
lo, e delle lipoproteine a bassa densità (LDL), l'incremento del livello delle lipoproteine ad alta densità (HDL), e la capacità di prevenire la perossidazione lipidica.
Di recente è stata anche dimostrata la capacità di questa formulazione di ridurre i processi infiammatori vascolari particolarmente importanti nell'aterosclerosi.
BRIEF HISTORY OF TIBETAN MEDICINE IN ASIA AND EUROPE

Tibetan medicine has aroused the interest of Western physicians during recent years, principally because of claims of its practical value. Tibetan doctors of the Tibetan Medical Institute at Dharamsala, India, are by now well known visitors to American and European universities, where they have lectured on theory and practice of Tibetan medicine. However, there is great difficulty in communicating the concepts of Tibetan medicine to the West. One reason often given for this difficulty is the overall difference between these two medical cultures and philosophies.

As a Western physician, my interest in Tibetan medicine stems from the fact that four generations of physicians in my family, educated in European schools, have combined Western medical concepts with those of Tibet in their practice (1,2,3,4,5,6,7). Knowledge of Tibetan medicine was acquired in our ancestral home in the Asian part of Russia, the Buryat Republic. This is one of the few places outside of Tibet where Tibetan culture has continued to flourish (3,7). Tibetan medicine is rooted in ancient traditions. Its first written document is approximately 1,300 years old (8,9). The consensus among Tibetologists is that this medical system was developed under the influence of the medicine and philosophy of India. However, at least at the beginning of the Tibetan Empire, that knowledge was primarily Western (i.e. Greek) and secondarily Chinese in origin (10).

The Tibetan Empire, which lasted from the seventh to the ninth centuries, extended south to the plain of the Ganges, north to Samarkanda, and included part of China (8). The vast and culturally varied territory of that empire had an impact on the development of Tibetan medicine. Buddhism was brought from India to Tibet, providing a philosophy that has become essential in medical education and knowledge in that country (8,9). Symbolically, Buddha occupies an important position in the medical hierarchy of Tibet. One of his titles there is “Supreme Physician” and he is often thought of as the “Tibetan Aesculapius”.

The Tibetan king Ti-song-De-tsen invited in VIII century AD Padma-Sambhava, a famous Buddhist teacher from the College of Nalanda, in India, to Tibet. The three kings who ruled the Tibetan Empire were, in chronological order, Song-tsen Gam-po, Ti-song De-tsen and Rolphon. They are regarded as the most prominent figures in Tibetan history. In addition to the introduction of Buddhism, their reigns were highlighted by a medical convention which took place between 755 and 797 AD, at Samye, southeast of Lhasa, the capital of Tibet (11). During that meeting, renowned physicians from Persia, Greece, India, China, Afghanistan, Nepal, East Turkestan and Kashmir translated their medical works into the Tibetan language.

The eighth and ninth centuries have also been remembered in the history of Tibetan medicine through the work of a physician known as the “Elder gYud-thog Yon-tan mGon-po” or as the “Excellant Protector”. During the 120 years of his life, the Elder earned the reputation as a charismatic teacher. He was probably the first to compile the scattered texts on Tibetan techniques of diagnosis and treatment (12,13). One of his descendants, the “Younger gYud-thog Yonタン mGon-po” is credited with adding a broad knowledge to the canon textbook of Tibetan medicine the yGyud-bzhhi. In fact, the original of the yGyud-bzhhi (pronounced Zud-shi, meaning “Four Roots”) was brought to Tibet from

*“I taught my patients that I do not cure illness, but that I remove the causes of disease. I taught them that the aim of mankind is consciousness, will, and good deeds – only these things can bring realization to the aims of humanity. I instruct them that nothing but conscious collaboration with nature can yield health and well-being.”

(Dr. Vladimir Badmaev, Jr.)
India during the active period of the Empire. According to one source, the book was written originally in Sanskrit in the fourth century. Most likely, the translation into the Tibetan language was accomplished in the eighth century by Vairochana, with the assistance of the Tibetan physician, Zla-ba mNon-dgya (9). That translation was presented to Padma-Sambhava, the famous teacher of Buddhism, who became skeptical whether the Gyud-bzhi could readily be understood and appreciated by a majority of the physicians of that time. In the late nineteenth and early twentieth centuries that ancient work was translated from Tibetan and Mongolian into Russian by my granduncles Dr. Alexander Badmaev and Dr. Peter Badmaev (14) (A). Historically, medical education in Tibet has been based on a highly structured system, with Buddhist monasteries functioning as medical schools (9). The first medical college in Tibet, Kong-po-menlung, was built in the eighth century at Lhasa. Among medical schools established since then, the best known are the Chagpori Medical College, built in the seventeenth century, and Mentse Khang built in 1915, both in Lhasa. Since 1959, the Tibetan Medical Institute, at Dharamsala, India, is the center recognized as upholding this medical tradition.

Tibetan medicine has also been practiced in Mongolia, where it was introduced in the year 1235 by the physician, Sakaja, who cured Gordon, the ruler of that country, of a form of paralysis (15). The Mongolian people, in recognition of the Tibetan contribution to their medical knowledge, as well as the teachings of Buddhism in Mongolia, awarded the ruling priest-prince of Tibet in 1547 the Mongolian title of “Dalai-Lama,” meaning “Ocean Priest” (16). In the eighteenth century, Tibetan medicine was brought from Mongolia to the Asiatic part of Russia, and both that medicine and Buddhism have flourished in the Buryat Russian Republic.

Unlike Ayurveda and Chinese medicine, Tibetan medicine came to the attention of the West relatively recently, in the middle of the nineteenth century. The pioneers were Alexander Csoma de Koros, a Hungarian “hero of learning,” who had spent years in seclusion in Tibetan monasteries studying the language and Tibetan medical treatises (17). The other pioneer was my ancestral, Buryat physician, Dr. Sul-Tim-Badma, who, in recognition of his medical skills, was invited in 1850’s to the European part of Russia by the then governor of Siberia, Muraviy Amurski. Later, Dr. Sul-Tim-Badma settled in St. Petersburg and changed his name to Dr. Alexander Badmaev (2,3). Alexander was soon followed to St. Petersburg by his younger brother Dr. Peter Badmaev, whose Buryat name was Zham-saran. Both Alexander and Peter are well recognized figures in the latest Russian history for their ties to the last two emperors of Russia. They both become court physicians to the Czars (18,19).

THE PRINCIPLES OF TIBETAN PHARMACO-THERAPY

According to the tradition carried in my family, herbal treatments have a certain regimen (18). The treatment usually starts with a digestive formulation because, in Tibetan medicine, disease is considered primarily a derangement of nutrition. After the initial treatment, and to correct the suspected nutritional pathology, the appropriate treatment of any secondary disease is then instituted. Nutrition is central in the theory and practice of Tibetan medicine. According to that concept, prevention of disease can be accomplished by seasonal adjustment of the menu to comply with changing nutritional requirements. The taste of the food is the single most important consideration in defining proper nutrition and preventive medicine during the seasons of the year. Tibetan pharmacotherapy has been based on the concept of proper nutrition, and in fact herbal and mineral formulae, as passed down in my family tradition, were referred to as
a “condensed food” for a specific disease condition. The Tibetan herbal formulations as practiced in my family have been composed of several herbal and/or mineral ingredients. These have been arranged based on triadic philosophy derived from Ayurveda into three therapeutic groups of ingredients occurring in each formula:

1. the main acting ingredients,
2. the ingredients which support the main action, and
3. the ingredients that prevent any untoward effects of the first two groups and increase gastrointestinal bioavailability of the active principle

### COMPARISON RESULTS OF THERAPEUTIC No. 28 VS PHARMACEUTICAL DRUGS

<table>
<thead>
<tr>
<th>Compound name</th>
<th>Duration of treatment</th>
<th>percent increase maximal walking distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>12 weeks (Hurlimann)</td>
<td>54%*</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>16 weeks (Schrader)</td>
<td>98%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>16 weeks (Samochowiec)</td>
<td>93%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>16 weeks (Drabæk)</td>
<td>97%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>16 weeks (Wojciech)</td>
<td>103%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>16 weeks (Smulski)</td>
<td>112%</td>
</tr>
<tr>
<td>Pentoxifylline</td>
<td>24 weeks (Porter)</td>
<td>58%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>4 weeks (Vöker)</td>
<td>40%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>24 weeks (Porter)</td>
<td>33%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>8 weeks (Bojan)</td>
<td>47%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>24 weeks (Lindgarde)</td>
<td>50%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>90 days (Chacon-Quevedo)</td>
<td>25%</td>
</tr>
<tr>
<td>Neftidrofuryl</td>
<td>24 weeks (Phole)</td>
<td>70%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>12 weeks (Maass)</td>
<td>54%</td>
</tr>
<tr>
<td>Buflomedil</td>
<td>12 weeks (Trubestein)</td>
<td>97%</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>90 days (Chacon-Quevedo)</td>
<td>28%</td>
</tr>
<tr>
<td>Bencyclan</td>
<td>6 weeks (Holle)</td>
<td>34%</td>
</tr>
<tr>
<td>Nifedipine</td>
<td>90 days (Chacon-Quevedo)</td>
<td>21%</td>
</tr>
</tbody>
</table>

* Hurlimann study assessed pain free walking distance see references

(Badmaev V, Essentials of Complementary and Alternative Medicine 1999)
THE EVOLUTION OF TIBETAN PHARMACO-THERAPY

This system of herbal and mineral formulae has been continuously developed and used for over 100 years with each formula known by its numerical designation, e.g., Badmaev formula No. 28, Badmaev formula 179, Badmaev formula No. 269 etc. The partial list of these formulae and their clinical indications have been described elsewhere (1). In 1969, Karl Lutz a Swiss industrialist and my father Dr. Peter Badmaev, Jr. founded the Switzerland based company Padma AG. 4 (1,18) This company (name Padma derived from the family name Padma or Badma, which means Lotus Flower) was established to scientifically and commercially explore the Badmaev’s know-how and clinical experience of the formulae. The first products that were clinically studied, registered with the Swiss IKS and introduced to the market place included Badmaev formula No. 179, Padma Lax; and Badmaev formula No. 28, Padma 28.1 (18)

The formula 28 is one of the best clinically tested traditional multicomponent formulations known. The usefulness of the formula in the treatment of peripheral vascular disease (PVD) was first clinically evaluated by Hurlimann20 in late 1970’s. Subsequently, five double blind trials of the formula in PVD have followed [Tab. 1]. In addition to the cardiovascular the anti-inflammatory and the immune system modulating mechanisms of the formula have been reported [Tab. 1] (20).

The formula (No 28) was fortified recently with a minute amount of black pepper extract (standardized for 58% alkaloid piperine-Bioperine®) which has been shown in clinical studies to increase the bioavailability of broad range of nutritional compounds [Fig. 1, Fig. 2] (21,22).

The consensus among the participants of the January, 1999 conference on Bioavailability of Dietary Supplements organized by The Office of Dietary Supplements (ODS) of the National Institutes of Health (NIH), Bethesda, Maryland (USA) was that bioavailability (term involving efficiency of absorption as well as utilization of a nutrient(s)) is crucial to the health benefits of a supplement. The nutritional role of black pepper extract for fat and water soluble nutrient bioavailability was discussed during that conference.

The formula 179 - a gastrointestinal formula, has been tested in a 4 week open field study in Switzerland by four independently working physicians1. A total of 52 patients of both genders presenting with irregular gastro-intestinal (GI) functions manifested by constipation, flatulence, feeling of fullness, heartburn and belching participated in these studies. The 43 participants reported a significant (p<0.001) GI improvement after using No. 179.

No. 179 eliminated gas in 80% of patients, heartburn in 83%, abdominal fullness in 76% and constipation in 74%. The 85% of patients reported relief within one week after taking 1 to 3 tablets per day. Those patients who had no history of laxatives use or previously used mild laxatives benefited most from therapy with No. 179. While typically the whole formula is more effective than the individual herbs, one of the most active gastrointestinal components of No. 179 was shown to be Terminalia chebulica, fam. Combretaceae and derived gallotannins compounds. (Fig. 3, Tab. II, Tab. III).

The formula No. 96 and related No. 269 were tested in vitro with the MDCK epithelial tissue culture cell line for its traditionally recognized anti-viral effect27,28. The results indicate that the formula is active in protecting epithelial cells against damage caused by influenza virus. Traditionally it is believed that “lymph factor” plays an important role in the mechanism of No. 96 and No. 269. The phenolic compounds abundantly present especially in formula No. 269 have been found to regulate two important parameters of the immune system in human, i.e. in-
Mean serum $\beta$-Carotene changes during Bioperine® trial

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Fig. 1

Mean serum $\text{CoQ}_{10}$ values during supplementation of 120 mg of $\text{CoQ}_{10}$ with and without 5 mg of Bioperine®

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Fig. 2
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**Fig. 3**

terleukin-12 (IL-12) and protein compounds inhibiting apoptosis (IAP). In the 34 week study a group of 40 elderly patients (>70 years old) of both sexes received daily 500 mg of phenolics from turmeric, known as curcuminoids. As a result of this regimen the serum levels of IL-12 significantly increased and IAP levels gradually decreased (Fig 4. and Fig 5). There were no objective or subjective reports of any untoward reactions due to the treatment. (Badmaev V, Personal communication, February 2001).

**TIBETAN THERAPY IN THE CONTEXT OF TIBETAN MEDICINE**

Herbal therapy plays an important, but not primary, role in the overall approach to the treatment of a disease in Tibetan medicine. Before prescribing any specific formulation to a patient, a physician makes sure that a patient understands the overall approach to the disease. According to this approach none of the techniques devised by man against any disease could be as helpful as the body’s own means of fighting the disease. These natural means should be
## RESPONSE OF ANTACID AND AMLAKI IN ULCER DYSPEPSIA

<table>
<thead>
<tr>
<th>THERAPY</th>
<th>INITIAL PAO mEq/h</th>
<th>Symptom score</th>
<th>4 WEEK TREATED PAO mEq/h</th>
<th>Symptom score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antacid</td>
<td>18.33±4.26</td>
<td>4.20±0.45</td>
<td>15.0±3.06</td>
<td>0.40±0.55*</td>
</tr>
<tr>
<td>Amlaki</td>
<td>22.80±5.27</td>
<td>4.60±1.34</td>
<td>16.0±3.19</td>
<td>0.60±0.84**</td>
</tr>
</tbody>
</table>

PAO: Peak acid output, *p<0.001, **p<0.01


*Tab. II*

## RESPONSE OF ANTACID AND AMLAKI IN NON ULCER DYSPEPSIA

<table>
<thead>
<tr>
<th>THERAPY</th>
<th>INITIAL PAO mEq/h</th>
<th>Symptom score</th>
<th>4 WEEK TREATED PAO mEq/h</th>
<th>Symptom score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antacid</td>
<td>20.01±3.06</td>
<td>4.40±0.63</td>
<td>14.7±9.0*</td>
<td>1.53±0.65*</td>
</tr>
<tr>
<td>Amlaki</td>
<td>20.56±4.17</td>
<td>5.0±1.22</td>
<td>15.5±4.04*</td>
<td>1.61±0.84**</td>
</tr>
</tbody>
</table>

PAO: Peak acid output, *p<0.001, **p<0.01


*Tab. III*
supported, during critical moments, by specific treatments. But, in the first place, the patient should be maintained in good shape by: 1) proper nutrition, 2) good life-habits, 3) proper adjustment to the seasons of the year, and 4) awareness by the individual of his/her physical and psychological predispositions. In order to fulfill these four conditions of well-being a man should guide himself/herself with awareness, will power and compassion. These three aspects, based on the triadic philosophy derived from Ayurveda, are named in Buryat language Chi, Schara and Badahan corresponding to Vata, Pitta, Kapha in Ayurveda.

In modern medicine there is, regrettably, little recognition of moral values as a means of disease prevention and treatment. Indirectly, this void in contemporary western medical practice is becoming recognized and the role of family physician by some is being restored and enlarged so that a patient is approached on a more personal level. The communication with a patient in Tibetan medicine is a critical part of a visit to the doctor’s office. Physician recommendations, given to a patient during office visits, are not only to be acknowledged but also understood by the patient. Thus, the patient acquires a sense of health-care philosophy, and can identify with it and could further propagate it. This simple approach results in an efficient system of preventing disease in the first place. This approach to a health care has been referred in my family tradition as “Synthesis Medicine” 1.

THE FUTURE OF TIBETAN MEDICINE

Introducing Tibetan medicine and integrating its principles into the Western medical practice can
improve existing healthcare considerably in many ways. It is not only a matter of advanced technology that allows people to be and feel healthier. Despite tremendous advancement in medical technology we, as a society, are not healthier. It suffices to observe that the work of man, his thoughts and the outcome of his deeds, are chiefly directed towards destruction and based on short-sighted goals. Today, economic and political life has become a kind of thoughtless game of chance; the cult of the power of the group and the State has overshadowed the real aims of humanity. Regrettably the delivery of modern health care became an integral part of this bureaucratic and technocratic system.

The medical tradition as known to me stresses an unusual approach to health care, where a man should guide himself with moral values, with the ultimate goal being compassion. As unusual as it may sound, however, to recognize moral values as a means of well-being and an integral part of the treatment method would be a meaningful step towards better medicine. Perhaps we should go back to the past and only then to the future.
Tibetan Medicine: An Effective Botanical Treatment

References


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16) Olschak BC. (1973) The art of healing in ancient Tibet. CIBA Symp; 129-34.


References for Table I


(A) Badmaev, Badmayev, Badmajeff, Badmajew – different spelling of the same name.

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