

## The 7th Conference on Health Care of the Chinese in North America



### Clinical Toxicity of Herbal Medicine in Taiwan

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#### Abstract

Traditionally, herbs have been considered to be non-toxic and have been used for treating various health problems world-wide. Severe toxicity resulting from use of herbs has been documented in many occasions, yet the potential toxicity of herbs has not been recognized by many people. We select some case observations of herbal poisoning to illustrate the potential health hazards of the use of herbs and discuss the current status of this issue. In Taiwan, one can dispense or buy herbs freely. Since 1979, the Food and Drug Laboratory Bureau (FDB) of the Department of Health, Executive Yuan, has had an ongoing program of Traditional Medicine Analysis Survey. From 1975 through 1981, among the 249 cases of unlicensed traditional medicines tested, 216 (86%) were found to include "western medicines". The existing channels to pursue drug safety control of traditional medicine include:

1. Consumer Protection Service Center at County Health Departments;
2. Consumer Protection Association (CPA);
3. Medical Centers;
4. Department of Justice;
5. FDB

Through the channel of CPA, 22-100% of the samples collected from various places were found to be illegal: snake shop (100%); Kung-Fu lodge (59%) street vendors (58%); herb stores (57%), relatives (50%); temples (41%); mail order (35%); traditional medicine stores (32%); Mainland China (26%); traditional medicine doctors (22%); overseas (20%). Most of the illegal drugs identified contained the following ingredients: (1) NSAIDS; (2) CNS stimulants; (3) antihistamines; (4) diuretics; (5) steroids; (6) others, etc. In the year 1993, 103 cases of poisoning related to the use of herbs were recorded in the National Poison Center. Surprisingly, 33% of the cases recorded were in children below 15 years old. This implies that many of the pediatric poisonings are actually directly related to the inappropriate safety concepts and attitudes preexisting in the parents. The fact that 29% of recorded cases were either life threatening or fatal suggests that the safety of herbs should never be overlooked.

#### Introduction

Traditionally, herbs have been considered to be nontoxic and have been used for treating various problems by the general public and/or traditional medicine doctors worldwide, particularly in the Chinese cultural system. While the literature has documented severe

toxicity resulting from the use of herbs on many occasions, still the potential toxicity of herbs has not been recognized by the general public or by professional groups of traditional medicine. Here we select some case observations of herbal poisoning from the literature and from our practice to illustrate the potential health hazards of the use of herbs and discuss the current status of this issue in Taiwan.

## Case reports

**Case 1:** A 33 year-old woman was transferred to our service from a city hospital with chief complaints of severe numbness over four extremities and unstable gait for several days. She was healthy and had delivered a normal baby 4 weeks earlier. Six days prior to this admission, she drank chicken soup prepared from a herb blend recommended by a traditional Chinese herb shop, for a general tonic and quick recovery from delivery. She prepared the soup with a 15 gm Bajiaolian root slices and 22% concentrated rice wine by herself. About 30 minutes after ingestion, she developed abdominal cramps, intractable vomiting, diarrhea and dizziness. She visited a city hospital and her gastrointestinal upset was relieved by supportive treatment only. On the third day, a "stocking and glove" pattern of numbness developed over all four extremities. This was followed by unstable gait on the fourth day. The numbness progressed and extended gradually to the proximal parts of all limbs on the day of her arrival at our service.

**Case 2:** A 39 year-old female drank a water stewed blend of Bajiaolian (60 gm) which was recommended by a traditional Chinese medicine doctor for treating her dysmenorrhea. After one hour, abdominal cramps, nausea, vomiting and watery diarrhea developed. She called on a local general practitioner and received supportive treatment for acute gastroenteritis. Seven hours after ingestion, she was found to have hallucinations, paranoid delusions and bizarre behavior. She was brought to a provincial hospital.

**Case 3:** A 43 year-old female developed numbness over lips, tongue, and upper extremities 30 minutes after drinking *Aconitum carmichaeli* Debx 2 gm powder. The numbness progressed to her lower extremities and chest and was followed by nausea, vomiting, general weakness, cold sweats, vertigo and fainting spells. Upon her arrival at the emergency room, blood pressure was 100/70 mmHg, pulse 70/min, respiration 28/min and temperature was 36.4°C. EKG showed multiple, frequent VPCs. She developed lip cyanosis and hand tremor.

**Case 4:** A 31 year-old male laborer was transferred to Chang Gung Memorial Hospital two hours after successful cardiopulmonary resuscitation. He had been well until the day of admission when he consumed a bowl of toad soup that was stewed with rice wine. Thirty minutes later, he experienced nausea, vomiting, dizziness, blurred vision and general weakness, followed by perioral numbness and unconsciousness. He was taken to another hospital, where cardiopulmonary arrest was noted and was successfully resuscitated.

**Case 5:** A 45 year-old housewife had a history of labile hypertension for one year. On December 11, 1989, for her sore throat, she drank about 50 ml of crude leaves juices. This was picked from an unfamiliar mountain plant and was deemed to be effective for treating sore throat. About half an hour after ingestion, dizziness, severe diarrhea, vomiting and yellowish halo vision were encountered. Eight hours later, she was seen in an emergency

room. EKG revealed marked bradycardia with 2:1 second degree AV block. Later, the measured serum digoxin concentration was 3.58 ng/ml.

**Case 6:** A 46 year-old female was brought to the emergency room by her family because of sudden onset of hallucinations, bizzare behavior and delusions after drinking a cup of juice made of Night-blooming (*Datura suaveolens*). She had dilated pupils with dry skin and flushed face. Her EKG showed frequent PVCs. Her unusual condition was reversed by the administration of physostigmine.

**Case 7:** A 61 year-old male was brought to the emergency room two hours after drinking a soup made of "Spanish Fly" with the complaints of bloody vomitus. He developed hypotension, hematuria, shortness of breath and cynosis. Blood routine showed WBC 44,500, platelet 41,000, prothrombin time 1.8x, APTT 50/37; blood chemistry: BUN 39, Cr 4.4, GOT 195, CK 1007; Urine showed RBC ++++; Chest X-ray revealed central pulmonary edema. He died within 3 days.

**Case 8:** A 32 year-old man was brought into our service for nausea, vomiting, dizziness, skin rash and general weakness for two weeks. He had received two courses of radiation therapy for NPC at NTUH. Two weeks prior to this admission he started to receive herb therapy. He inhaled a fume produced by burning a herb mixture containing unknown herbs and mercury. He developed nausea, vomiting, gingivitis, night sweats, shaking chills, soreness of palm, general weakness, numbness of four extremities, unstable gait, mastication difficulty, and generalized skin eruption. The urinary mercury concentration was 169 pg/L (normal < 50). He improved after receiving chelation therapy with BAL for 10 days.

## Discussion

The dosage form of traditional medicine includes stewed form, pill (Wan), powder (San), cream (Kau), and capsule (Dan). In Taiwan, the current practice of traditional medicine is prevalent among the licensed traditional medicine doctors, herb shops, street vendors, snake shops, temples, etc. Since 1975, the Food and Drug laboratory Bureau (FDB) of the Department of Health, Executive Yuan, has had an ongoing program of Traditional Medicine Analysis Survey. The purpose of this program is to identify unlicensed traditional medicine and the possible mixtures of western medicine. Between 1975 and 1981, among the 249 cases of unlicensed traditional medicine tested, 214 (86%) were found to contain "western medicines". At this time, the FDB of ROC has five channels to pursue its drug safety control of traditional medicines. These channels consist of:

1. Consumer Protection Service Center at County Health Departments;
2. Consumer Protection Association;
3. Medical Centers;
4. Department of Justice; and
5. FDB task force set up for traditional medicines safety.

Through these five channels, one can bring the traditional medicine for testing if there is a suspicion that the medicine he/she is using could be related to his/her health problem. In 1982, through the channels of County Health Department and Department of Justice, 32%

of the samples tested, which were dispensed by nonmedical professionals, was found to contain "western medicines". Through the channel of Consumer Protection Association, 22-100% of the samples collected from different places was found to have "western medicines" contents: snake shops (100%); Kung-Fu lodges (59%); street vendors (58%); herb stores (57%); relatives (50%); temples (41%); mail order (35%); traditional medicine stores (32%); mainland China (26%); traditional medical doctors (22%); overseas (20%). The illegal drugs identified, according to their labeling or claim for use, could be classified into the following: (1) NSAIDs: acetaminophen, indomethacin, mefenamic acid; (2) stimulants: caffeine; (3) antihistamines: chlorpheniramine; (4) diuretics: hydrochlorothiazide; (5) steroids: prednisone; (6) others.

Through the data collection system of National Poison Center, in the year 1993, a total of 103 cases of poisoning related to the use of herbal medicines were recorded. Surprisingly, 33% of the cases recorded were in those below 15 years of age. Nine cases of poisoning in children were related to the use of Pa-Bow Fen, Chi-Yin Wan and Gin-Fong-Fen. This implies that many of the pediatric poisonings were actually directly related to inappropriate safety concepts and attitudes of the parents. According to the severity of the poisoning, the cases can be classified as mild (22%): nausea, vomiting, abdominal fullness, diarrhea; moderate (33%): organ dysfunction such as liver, kidney, and metabolic acidosis; severe (29%): unconsciousness, cardiopulmonary distress, death. This finding suggests that the safety of herbs should never be overlooked.

Five years ago, Taiwan started to have cultural exchange and trade with Mainland China. This movement also had a promoting impact on the marketing of herbs. Many residents brought back herbs after visiting China. Quite a few products obtained from China were found to have the same problems as our domestic products. This impact had made the safety control of herbal medicines even more complicated in our country.

In Taiwan, herbs can be obtained from temples, night markets, street vendors, herb stores, traditional medicine doctors, and neighborhoods or relatives. People like to recommend the medicine he/she used to his/her relatives and friends without safety considerations. The general public and many of the traditional medicine practitioners also believe that the herbs are non-toxic and can be used in managing many health problems. Apparently, this cultural style/concept needs more attention in terms of drug safety education. A physician should also be aware that life threatening toxicity can occur in the use of herbal preparations.

"Good name in men and women, dear my Lord, is the immediate jewel of their souls, Who steals my purse steals trash; 'tis something, nothing; 'twas mine, 'tis his, and has been slaves to thousands; But he that filches me my good name, Robs me of that which not enriches him, And makes me poor indeed." -- Shakespeare, "Othello"