MEDICINAL USES OF ACONITE ROOTS – RATIONALISING RESEARCH AND RISK COMMUNICATION STRATEGIES

Thomas Y.K. Chan¹,²

¹Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, China
²Prince of Wales Hospital Poison Treatment Centre, Hong Kong, China

In traditional medicine, aconite roots (roots and root tubers of the *Aconitum* species) are used as medicinal plants only after adequate processing to markedly reduce their toxic alkaloid content. Processed aconite roots should only be prescribed and dispensed by a registered herbalist. The recommended dose should not be exceeded, i.e. 1.5-3.0 g for processed *Radix Aconiti* and processed *Radix Aconiti Kusnezoffii* and 3-15 g for processed *Radix Aconiti Lateralis*. Processed aconite roots should be decocted for ≥1.5-2 h before boiling with other herbs. Soaking and boiling during post-harvest processing and decoction preparation hydrolyse the *Aconitum* alkaloids (aconitine, mesaconitine, hysaconitine, yunaconitine, crassicauline A, jesaconitine, etc.) into less toxic and non-toxic derivatives. As these *Aconitum* alkaloids are potent cardiotoxins and neurotoxins with a narrow therapeutic index and herb-induced aconite poisoning can be complicated by serious cardiotoxicity leading to refractory ventricular tachyarrhythmias and asystole, extra caution is required in handling aconite roots (from quality control in post-harvest processing, trading, prescribing, dispensing to decoction preparation and consumption). To minimise the risks and maximise the potential benefits of aconite root therapy, there is the obvious need for a regulatory standard to ensure product safety/quality and good practices in the production, prescription, dispensing and administration of these herbs. A priority for research is to identify the avoidable factors and define the risks associated with aconite roots and unsatisfactory practices. There should be publicity measures to promote awareness of the toxicity of aconite roots and to emphasise the importance of appropriate dosing and compliance with instructions on decoction and consumption of these herbs. The public should also realise the high toxicity of aconite tincture, which is often prepared from raw aconite roots. Because of the presence of *Aconitum* alkaloids in very high concentrations, aconite tincture should never be taken by mouth. Effective communication strategies should be established to reach all target audiences.
THE SPECTRUM OF HERBAL POISONING

Deng JF.

Department of Medicine, Veterans General Hospital, Taipei, 11217 Taiwan

Many of the natural toxins originated from animals, plants as well as microorganisms are well known of having the potential to produce prominent but unwanted health effects. Due to the increased morbidity and mortality, the poisonings associated with the use of herbs and/or traditional medicines has raised an universal attention in past few years. In daily practice, herbs and/or traditional medicines has been widely used for either therapeutic or tonic purpose. It was found of having been dispensed by health professionals, quacks and other non-medical professionals such as witch doctors. It may contain minerals or any part of plants and/or animals. Upon exposure, the untoward clinical effects may vary from mild to severe toxicity and even life-threatening. In clinical setting, the difficulty in handling the poisonings associated with the use of herbs and/or traditional medicines can be categorized in the aspects of: (1) identification of the proprietary substances and active ingredients; (2) characterizing the kinetic pattern and toxicological effects; (3) the potential interaction between the herbs and modern medicines taken by the patients; (4) uncertainty of the diagnosis and treatment. Since the content and pattern of the use of herbs and/or traditional medicines does vary with the ethic culture and geography, a monitoring program designed for international use shall be useful in creating a systemic international data bank of herbs and/or traditional medicines with potential toxicity. In the meanwhile, further researches such as: (1) to facilitate the upgrading of analytic capability of identifying the active ingredients and characterizing its kinetics; (2) to speed up the procedures of evaluating the pharmacological and toxicological impacts does deserve to be reemphasized; (3) an initiative of creating international data bank of herbs and traditional medicines toxicity shall be discussed and moved forward.
Traditional medicine (TM) included herbal medicine is returning to be a new therapeutic choice of treatment in all over the world as well as Thailand. It is also a venue to be self-dependent in health care. There are now numerous registered TM unregistered products in the market. TMs generally are classified as low toxicity substances, however, poisoning related to them are subsequently recognized and reported. The causes of TM related poisonings include the products, practitioners and patients. Problems related to products’ quality include contamination, wrong ingredient and adulteration. Some drugs such as corticosteroids and non-steroidal antiinflammatory are intentional added into some fake recipes. Educational system for TTM practitioners is established. Licensing is also applied. However, some folks who are not in the system are still practicing. By inappropriate dispensing, their recipes would cause toxicity. Patients, themselves, are a cause of poisoning. Some Thai patients seek TM treatment while taking the conventional medicines without notification to their physicians. Drug interaction or additive drug effects sometimes occur and cause drug toxicity. Diagnosis TM related poisoning is also difficult. Inadequate labeling and information regarding to the ingredients are the obstacles for this matter. Patients sometimes are not aware about their toxicity and do not report to their physicians. Awareness is the key to recognize the poisoning from these products. Authorized agency should have proper process for registration of these products. Quality control of the manufacturing should be also strengthened. These measurements would prevent or reduce risks of poisoning by these products. Lastly, public should be educated to be aware of the chances of toxicity from these products. Conclusion: TM has both good and bad sides. Poisoning related to them may be caused by the products, practitioners and patients. Awareness of its toxicity and quality control are the keys for preventing poisoning.