

# Heavy metals in Ayurvedic Formulations- Safety Issues

**Karunakar SHUKLA\***

**& Vishal JAIN**

**Research Scholars**

Institute of Pharmacy

Pt. Ravishankar Shukla University

Raipur-492010

e-mail: karunakarshukla@gmail.com



"Users of Ayurvedic medicine may be at risk for heavy metal toxicity, and testing of Ayurvedic Herbal Medical Products for toxic heavy metals should be mandatory," the study by Dr Robert Saper and his colleagues of warned. The American medical research community has sounded a heavy metal warning against Ayurvedic cures. Herbal products from the Indian system of medicine sold in the US contain dangerous levels of lead, mercury & arsenic. In a study published the prestigious Journal of American Medical Association (JAMA), researchers from the Harvard Medical School reported that (HMPs) sold as remedies for treatment of ailments such as arthritis and diabetes contained toxic levels high enough to cause poisoning. The research team scoured outlets selling Ayurvedic remedies within 20 miles of Boston, including American vendors and Indian grocery stores, and bought 70 HMPs. Fourteen of the 70 contained heavy metals, they said. If taken as recommended by the manufacturers, each of these 14 could result in heavy metal intakes above published regulatory standards, they reported. The study comes amid Ayurveda's creeping recognition in the US in the face

of steep increases in medical care and drug costs. A US health survey in 2000 estimated that 750,000 American adults also had Ayurvedic cures, given in this report.

The Indian Government rubbished as "motivated" the reports in a section of the media that Ayurveda and Indian systems of medicine are laden with poisonous substances and said it would be ensured that such disinformation was stopped. Minister for Science and Technology Kapil Sibbal told the Rajya Sabha during Question Hour "the great human talent coupled with low labor cost, My Ministry and Ministry of Health will ensure that such disinformation is not perpetrated. We are ready to compete with anybody in the world and India is coming up in a big way".

## **FACTS**

It is well documented in Ayurvedic texts that metals are used in some Ayurvedic formulations. As in Modern Medicine they describe the adverse effects a medicine can cause to various body systems, similarly harmful effects of metallic medicines are also well documented. For example in "Purva Khand of Bhava Prakash Nighantu" (Dhatu-upadhatu Prakaran: verse 13) it is written, "Consumption of Impure gold 'bhasm' (ashes) or

pure gold 'bhasm' consumed improperly may destroy strength, shukra dhatu (reproductive tissue), cause diseases and even death". The antidotes of toxicity or management of symptoms caused due to consumption of metallic medicines are also vastly described.

There is a section in Ayurveda called "Rasa shastra" which describes the use of metals, ornaments, minerals and poisons for manufacturing special formulations to combat chronic and difficult diseases. Rasa Shastra can be called "Vedic Chemistry". As the modern laboratory chemicals were not invented in the Vedic era (3000 years ago), herbal juices were used instead. Although the methods, of testing these metallic medicines described in Rasa Shastra, sound outdated or unscientific, they seem to be based on some chemical principles. Because medicines declared non-toxic through these methods do not create any harmful effects in the body. Not only they are harmless, they work like 'steroids' used in modern medicine and can do miracles in difficult disease conditions or even the 'incurable' diseases.

These Ayurvedic metallic medicines pass through extensive processing before they are declared fit for internal use. The metals, ornaments and minerals are first purified and then burnt several times and converted to 'bhasm' (ash). Each time before burning, the metallic powders are processed with fresh herb juices to neutralize their toxicity. Some of the metals are burnt up to one hundred times to make sure the heaviness or toxic effect of the metal is nullified. Once the 'bhasm' is ready it is tested for toxicity. One of the numerous tests the "bhasm" has to pass through is called 'varitar' which means the 'bhasm', once ready for internal use, floats on water indicating non-existence of heavy metal in it. The 'bhasms' are then

transformed to compound formulas by mixing herbal powders. Special herbal juices are used for processing the compound formula.

Thus these are no more toxic metals but non-toxic herbo-metallic compounds. The modern chemical testing might still indicate the presence of that metal in these compounds but according to Ayurveda, these metals have been transformed to non-toxic form, which is safe for internal use. These lighter forms of metals (bhasm) contained in herbo-metallic compounds work as carriers (yogavahi). This means they are able to carry the herbs (mixed with them) faster to the desired site and start the action immediately. They increase the bioavailability of the herbs to the cell. They act as catalysts. After performing the desired action these harmless light metals (bhasm) are eliminated out of the body through our waste excretory systems (urine and stool).

The multi-ingredient compounds are formulated in a way that the ingredients are capable of counterbalancing any toxic effects, if any, present in the herbs or metals (bhasm). Besides, the use of these metallic preparations is discontinued after every 12 weeks for a couple of weeks, so that the body can eliminate or neutralize any traces of the metals left in the body. The period after which the use of metallic medicines should be discontinued may differ from metal to metal. In some metals like iron it is not even necessary to discontinue, while in more toxic ones like Arsenic, it is advised to skip one day after every six days. The proper dose of these metallic medicines is very important. Such medicines therefore should always be taken under the supervision of an expert who knows all methods to ensure zero toxicity and management of complications, if any. When purified/processed properly and used under an expert's guidance, these metallic medicines are quite safe for

internal use. If these medicines were fatal, it would have been evident in thousands of years of their use. Historically, Rasa Shastra an offshoot of Ayurveda developed around the period when Buddha existed (more than 2500 years ago). Ever since, it has been widely used by Ayurvedic doctors in India to treat millions of patients. If the metallic preparations were not safe, more than half of India would have died as a result of taking these medicines in all these years and this could not have gone unnoticed. However the findings are totally opposite. These metallic medicines have been used as wonderful life saving drugs for thousands of years without any adverse effects. The use of metals, poisons in medicines as described in Ayurveda, should not sound scary as the use of dangerous/poisonous ingredients is involved in all major medical systems including modern medicine. The contents of antibiotics, steroids, painkillers, tranquilizers and other chemical medicines are well known to everyone.

Their adverse effects are well documented exactly as of the metallic medicines documented in ancient Ayurvedic texts. Hundreds of thousand people die every year or suffer from complications resulting from drug reactions and surgeries. But we have lots of benefits of modern medicine and surgery especially during emergency and critical conditions. In order to get these benefits, we need to take modern medicines even though we know that they may contain ingredients that can be toxic or create complications. It has been noted that metallic Ayurvedic medicines can help patients who have tried all other medical system and have lost all hope to recover. That is why they are sometimes called as 'life saving' or 'miracle' medicines. But there can be complications and adverse effects of these medicines too, especially

when these metallic Ayurvedic medicines are labeled as 'herbal medicine' or supplements and sold through grocery stores or prescribed by spiritual gurus, yoga teachers, energy healers and unqualified Ayurvedic practitioners. It is like a barber performing a 'heart transplant' surgery. That could be really dangerous as well as scary.

Ayurveda is a serious medical system and has well developed systems of diagnosis and treatments. It is the only medical system in the world, which has apparatus to deal with complete human being, which comprises of mind, body and soul. Ayurveda considers each person to be unique and offers unique personalized Ayurvedic treatment. Two persons suffering from same symptoms may receive different treatment. The treatment is personalized according to the patients physical nature (prakriti), age, immunity, mind power, habitat etc. A customized diet, life style, exercise, emotional support, spiritual treatments, breathing and meditations techniques also form the part of the treatment. Ayurvedic treatments aim to eradicate the root cause of the disease, which could be located in the body, mind, environment, family or profession. It needs a proper qualification and experience for someone to understand and practice Ayurveda. The only way Ayurvedic medicines can be 'fatal' is when not taken under the guidance of a qualified doctor.

Like modern medicine, Ayurvedic medicines should not be sold over the counter specially those containing toxic metals. To conclude, the presence of toxic metals in Ayurvedic medicines and their effects have been well documented in various Ayurvedic texts. It would be interesting to do a research on what do these metallic medicines do when taken internally. Clinical studies should be done on people taking metallic medicines by checking their liver, blood and kidney functions on

regular basis. Facts described in Ayurveda texts like "Bhasms' are just carriers and are eliminated through excretory systems" should be confirmed by doing regular urine and stool analysis for the person consuming metallic medicines. If no adverse effects are found, these metallic medicines should be declared safe and used worldwide for the benefit of millions of those suffering from incurable diseases.' If medicines are found to have toxic or damaging effects, the manufacturing processes or the consuming processes have to be checked. According to facts documented in Ayurvedic texts these are the only two situations when metallic medicines can cause toxic effects in the body. It is not Ayurveda, but the manufacturing unit or the doctor/patient (not following instructions), which is at fault. Every Ayurvedic principle, treatment, medicine is pro-biotic- supports life and longevity. Ayurveda is safe, effective and holistic approach to achieve 'everlasting health.

#### **Final Thoughts**

Raw material used in the production of Ayurvedic formulation always tested for the maximum limits of

heavy metals specified by WHO (Arsenic not more than 10µg/kg, cadmium not more than 0.3 mg/kg, and lead not more than 10 mg/kg of raw materials).

Ayurvedic formulations (Bhasms) containing heavy metals for producing different effects like enhancement of bioavailability of herbs to the cell, act as a carrier for active ingredients and as a catalysts. By performing modern chemical tests on these formulations results indicate the presence of metals in these formulations but according to Ayurveda these metals have been transformed to non toxic forms, that are safe for internal use. After performing the desired action these light metals are eliminated from the body through our waste excretory system (urine and stool).

By following the Vedic Paddhati (ancient literature instruction) given in the authentic books of Ayurveda for preparation of these formulations and used in the supervision of well qualified Ayurvedic physician results in the tremendous benefits of heavy metals other than detrimental effects.