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NANOTECHNOLOGY: A NEW HORIZON TO AYURVEDA?

Rajeshwari P. N.

Asst. Prof. of Shalya Tantra, Amrita School of Ayurveda, Vallickavu, Kerala, India

Corresponding Author: drrajeshwariphd@gmail.com

Herbal medicines have been recognized by physicians and patients for their better therapeutic value and fewer adverse effects. Phyto therapeutics needs a scientific approach to deliver the active principles in a sustained manner to increase patient compliance and evade repeated administration. This can be achieved by scheming Novel Drug Delivery Systems (NDDS) for herbal constituents. NDDSs reduce the repeated administration, toxicity and enhance the therapeutic value by escalating the bioavailability. One such Novel approach is Nanotechnology which means building things from the bottom up with atomic precision, in simple words developing the high performance products by advanced tool and technologies.

The concept of reduction in particle size, dosage of a medicine without compromising the therapeutic value becomes the fundamentals of Herbo-mineral formulations of *Ayurveda* especially the *Bhasmas*. This is substantiated by the properties like '*Rasayana*' (Immuno-modulatory and anti-aging property) and '*Yogavahi*' (Drug carriers and targeted drug delivery) wherein drugs have prescription of very minute dose and they are readily absorbed, adapted, assimilated in the body without toxic effects. These attributes of *bhasmas* are comparable with the action of Nano particles in the body which are also biodegradable, biocompatible and non-antigenic in nature. This is the one phase of understanding the utility of a Novel drug delivery.

Before reaching to the blood, many constituents of the herbal drugs will be destructed in highly acidic pH of the stomach or constituents will be metabolized by the liver. Resultant, the optimum quantity of the herbal drugs may not reach the blood. If the drug does not reach the optimum serum concentration, the desired benefit will not be expected. Nano carriers applying to herbal remedies will carry optimum amount of the drug to their site of action bypassing all the barriers such as acidic pH of stomach, liver metabolism and increase the prolonged circulation of the drug into the blood due to their small size. Nano-sized drug delivery systems of herbal drugs have a potential future for enhancing the therapeutic value of Herbal medicines. Engineering of high performance Ayurveda products should become a new horizon to all the members of Ayurvedic fraternity.
