

Extract Versus Whole Drug Usage

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Abstract:

Successful treatment depends on the choice of appropriate dose and dosage form. Presently advancement in technology has led to the extensive use of fractionate & isolates. Principles of extraction are seen in the classical dosage forms where a suitable homogenous medium was used based on the type of the drug. Drugs having water-soluble fraction are used as *Kwatha*, those having fat-soluble fractions are used as *Ghruta/Taila* and so on. Present day extracts are obtained by extracting herbal drug of certain particle size with suitable extraction medium. Drug action in Ayurveda is explained based on *Rasa Panchaka*, and each component plays a specific role, hence a chemically isolated derivative may not serve the purpose and will produce adverse effects. Isolation, fractionation are seen because of advancement in technology and research methods and can these be called Ayurvedic medicines is a question to be asked. Therefore, research works should be directed towards providing the use of whole drugs and find ways to potentiate the drugs as per principles of Ayurveda.

Key words : Extracts, Whole drugs, Isolation, Ayurveda

Introduction:

Selection of an appropriate dose and dosage form are important aspects of clinical practice along with the accurate clinical diagnosis. As per *Acharya* Charaka, the ideal dosage of drug is that which gives quick relief, without causing another complication and which gives a tonic effect [1].

Ayurveda believes in the treatment of the patient and not the ailment and the classical approach was to use medicaments uniquely designed to suit the requirements of the patient A physician decides a particular dosage form say *Kvatha*, *Ghruta*, *Gutika*, *Avaleha* etc depending upon specific needs of the patient. This choice depends on the strength of the *Tridoshas* of the patient, the degree of severity of ailment and the patient's lifestyle [2].

With the recent advances, we see that the treatment modality is more disease oriented and mainly aims to achieve quick results and thus we see the extensive use of isolates and fractionates in therapeutics.

Concept of whole drug and extract:

Ayurveda believes in the use of the drug as a whole, which means to say that a drug as a single entity composed of various components is used in therapeutics.

Herbal drugs are used after crude pharmaceutical processing like *Churna*, *Kashaya* and so on. Various dosage forms were designed in an attempt to enhance the drug action, to increase the shelf life as well as to increase the absorption. Principles of extraction are seen in the classical dosage forms

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where a suitable homogenous medium was used based on the type of the drug.

Ex.: Drugs having water soluble fractions are administered in the form of *Kvatha*, those having fat soluble fractions are administered in the form of *Ghrita/Taila*, the drugs whose fractions can be extracted and preserved better in alcohol should be administered in the form of *Asava, Arishta*. The drugs having volatile principles are given in the form of *Hima, Phanta* and *Arka*. But here when we say extraction, we do not mean to identify, isolate, and synthesize the active principle of a drug unlike that done during chemical processing where a herbal drug is reduced to a particular size, dissolved in an appropriate solvent, filtered, concentrated and dried[3].

Drug extracts are defined as preparations obtained by extracting herbal drug of certain particle size with suitable extraction medium.

Steps in processing include-

- 1) Communion: A process of fragmenting substance into small particles by mechanical forces.
- 2) Extraction: the Purification of the solution containing the extract.
- 3) Concentration of the solution containing the extract.
- 4) Drying of extracts.
- 5) Pulverization of dry extracts.

Solvent chosen should dissolve the secondary metabolites under study, be easy to remove, inert, non-toxic and not easily flammable. Extraction agents maybe hydrocarbons like petroleum ether, alcohols like methyl alcohol, ethanol, ketones like acetone, carboxylic acids like acetic acid, esters like ethyl acetate, ethers like di-ethyl ether. Again, solvents are chosen according to the required active principle.

Ex ; - To extract levadopa from *Mucuna pruricans* seed, its reduced to a particle size of 20# and the solvent used is rich 1% acetic acid. For alkaloid extraction from *M. pruricans* seeds, 70% v/v alcohol is used[4].

Principle of drug action in Ayurveda:

Drug action in Ayurveda is explained based on *Rasa Panchaka* concept i.e *Rasa, Guna, Veerya, Vipaka* and *Prabhava*. Some actions of the drug can be attributed to *Rasa*, some to *Guna*, some to *Virya*, some to *Vipaka* and some to *Prabhava*.. Example: *Madhu* (Honey) by its *Kashaya Rasa* is *Pitta Shamaka*, by

Ruksha Guna is *Kapha Shamaka*, *Mahat Panchamoola* though *Kashaya Tikta* in *Rasa* is *Pitta Shamaka* by *Ushna Virya* and so on[5]. Therefore each component of a drug has a specific role to play in the drug action. Any component isolated and used may not function in the same way as it does when used as a whole and hence the whole drug cannot be replaced by an isolated chemical derivative[6].

"Rasaadinaam dravyameva srestha"

In spite of the importance of each component, the whole drug is considered as superior because in therapeutics, it is the combined effect of all these components, which is seen to give the desired effect. Ex: *Guduchi* is *Kapha Pittahara* due to *Rasa (Tikta)*, *Vatahara* due to *Virya (Ushna)*, *Vrsya* due to its *Vipaka (Madhura)*, and anti-leprotic due to *Prabhava*.

When a crude drug is administered, some fractions other than the chief constituents are responsible for balancing the unwanted bad effects whereas extracts produce severe side effects.

Ex ; - Reserpine isolated from *Sarpagandha (Rauwolfia serpentina)* and administered produces severe side effects like increased gastric acidity, mental depression, parkinsonism, weight gain, impotency and so on which are seen as an extension of its pharmacological action[7]. This does not happen when *Sarpagandha* is given as a whole.

Again in *Saptarangi*, when critically analysed was found to have one fraction possessing hypoglycaemic action and another fraction hyperglycaemic action, but when *Saptrarangi* as a whole was administered to a patient of diabetes mellitus, it showed only a mild hypoglycaemic action. These points to the specific arrangement of fractions in a drug in such a manner that only the good actions are found and harmful actions are avoided[8]. Therefore an isolated chemical derivative when administered acts in a focused manner to give quicker relief but may not serve the purpose of treatment, as Ayurveda believes that an ideal treatment is that which cures the disease and does not create another complication.

Discussion:

Ayurveda believes in a broad-spectrum approach, where all the major and minor ingredients present in the drug are expected to play a role in the

drug action. The concept and description of *Virya* shows beyond doubt that *Acharyas* had a clear idea about the mode of drug action. Again efforts have been made to preserve and fortify the *Virya* of drugs by certain pharmaceutical processes and techniques, but the classics have nowhere mentioned to isolate and use only the active principles. [9]

Isolation, fractionation are seen because of advancement in technology and research methods, such a development is strengthening the allopathic system rather than Ayurveda. The question to be asked now is whether these isolates and fractionates can be called as Ayurvedic medicines when they are not made as per Ayurvedic pharmacology and principles.

Conclusion

To achieve quicker therapeutic action and give relief is the need of the hour and in an attempt to achieve this; isolated chemical derivatives are replacing the classical dosage forms, even though it is causing severe complications. Therefore whole drug usage and extractive as per the principles of Ayurveda should be followed. Research works should be carried out to find ways to potentiate the drug without chemical isolation.

References

- [1] Acharya Charaka, Charaka Samhita with Ayurveda deepika commentary by Chakrapani Datta, edited by Yadavji Trikamji Acharya, Chaukambha Surabharati Prakashana, Varanasi, 2008. p.704
- [2] T.S Murali, Warriar P.K, Development of herbal drugs and the Ayurvedic medical system, Aryavaidya, vol 13, no 3, feb-apr, 2000.
- [3] Dhyani Shivcharan, Rasa panchaka, Krishnadas academy, Varanasi, 1st edition 1994. p.12
- [4] R.D.Chaudhary, Herbal drugs industry-a practical approach to industrial pharmacognosy, Eastern publishers, New delhi.p.417
- [5] Acharya Charaka, Charaka Samhita with Ayurveda deepika commentary by Chakrapani Datta, edited by Yadavji Trikamji Acharya, Chaukambha Surabharati Prakashana, Varanasi, 2008. p.148
- [6] T.S Murali, P.K. Warriar, Development of herbal drugs and the Ayurvedic medical system, Aryavaidya, vol 13, no 3, Feb-Apr, 2000.
- [7] R.S. Satoskar, S.D., Bhandarkar, Rege, Nirmala.N., Pharmacology and Pharmacotherapeutics, 21st edition, Popular prakashan Pvt.Ltd, Mumbai. p.412.
- [8] Dhyani Shivcharan, Rasa panchaka, Krishnadas academy, Varanasi, 1st edition 1994. p.39.
- [9] Dhyani Shivcharan, Rasa panchaka, Krishnadas academy, Varanasi, 1st edition 1994.p.37

