



PRINCIPLES OF MONO DRUG THERAPY IN AYURVEDA- A REVIEW

Prof. Karnam Chandrashekhar*

Department of Dravyaguna, V.Y.D.S. Ayurveda Mahavidyalaya, Khurja, Bulandshahr (Dist), Uttar Pradesh -203131.

***Corresponding Author: Prof. Karnam Chandrashekhar**

Department of Dravyaguna, V.Y.D.S. Ayurveda Mahavidyalaya, Khurja, Bulandshahr (Dist), Uttar Pradesh -203131.

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ABSTRACT

Best doctor gives the least medicines- Benamin Franklin. A quote that is needed to contemplate in the present scenario. Medicalization has pushed the standard therapy to a different direction. Bunch of drugs used to treat a condition has not only irked the patients but also contributed additional health issues. The credibility on the patient- doctor relationship is highly at stake. The psychological distress and the economic burden associated with poly pharmacy are really worrisome. Ayurveda explained different approaches such as Mono drug therapy and drug therapy with poly herbal preparations for treating a condition. No doubt, the formulations containing more than one ingredients offer better effect through synergy. Nevertheless, Mono drug therapy is effective in its own way in number of conditions. Administration of a dosage form prepared from a single drug with a proper anupana, at a right time through an appropriate route and with an optimum dose benefits the patient to a greater extent. It can act as first aid or preliminary step or a complete treatment in different conditions depending upon the severity. But, its application is based on few important principles. This review is an earnest attempt to explore the important principles governing the mono drug therapy in Ayurveda that need to be considered while prescribing it to the patient.

KEYWORDS: Mono drug therapy, Rasa vikalpa, Reverse pharmacology, shelf life, Chronopharmacology.

INTRODUCTION

Mono drug therapy [MDT] is one of therapeutic approach propounded by the seers of Ayurveda to treat different diseases. It is aimed to target the vitiated doshas and bring them back to normalcy. It is also known as mono herbal therapy [MHT] involving usage of formulation prepared from the useful part of a plant with an appropriate anupana. The success of mono drug therapy is also based on right dosage and proper route of administration. Acharya Charaka has highlighted the mono drug therapy in his work. He listed many single drugs as a drug of choice for various pharmacological actions.^[1] A total of 403 different formulations prepared out of 129 single drugs can be outlined from Charaka samhita.^[2] Similarly, 125 formulations prepared from 68 single drugs can be traced from Yogaratnakar Purvardha.^[3] Many single drugs have proved to be effective in evidence based studies. For instance, *Vitex agnus castus* L in premenstrual syndrome, *Allium sativum* L as an anti-platelet, hypolipidaemic and hypotensive agent^[4] Ginger (*Zingiber officinale* Roscoe) as anti-emetic medication in travel sickness^[5] Piper betle, *Jasminum sambac*, *Cardiospermum helicacabum* and *Tribulus terrestris* independently acts as angiotensin converting enzyme inhibitor promising the anti-hypertensive effect.^[6] Ethno-botanists, folklore practioners and the traditional healers of many parts of

the world still use and advocate mono drug therapy [MDT] as a major approach. The contemporary science also focusses on single medicinal plant to obtain lead compound to develop a new drug. More than 120 compounds from different plants are used as medical agents.^[7] No doubt, poly drug therapy [PDT] has been established as a main stay of treatment modalities in Ayurveda owing to synergistic effects. It is usually prescribed in the form of poly herbal preparations [PHP]. But, the difficulty in standardizing the end product i.e. poly herbal formulation [PHF], inconceivable interaction among the herbs, inability in understanding the mechanism of drug action, high cost of the formulation and some toxicity related to herbo-mineral preparations are paving way to rethink about safe, simple, cost effective, convenient single drug therapy. Of course, the safety studies, drug standardization and explanatory studies are the important protocols to be followed before the mono drug therapy is put into practice. This will, certainly, enhance the use of herbs with utmost confidence. But, mono drug therapy [MDT] in Ayurveda is based on certain principles that are given less importance these days. Hence, there is a need to explore and understand the principles of Mono drug therapy [MDT] in a better way. An earnest attempt is made in this review to address all the necessary principles to be considered while opting for mono drug

therapy [MDT]

Selection of rasa and evaluation of a drug of choice:

Mono drug therapy [MDT] is a very specific approach to hit the target. Rasa vikalpa exactly do so by breaking pathogenesis. Since it is parallel to dosha vikalpa of a pathogenesis. For instance, amla rasa in vata, Tikta madhura Pitta vata and Katu Madhura in Kapha vata conditions.^[8] Drug of choice depends on rasa vikalpa and it should be further evaluated on the basis of Paratwa.^[1] Agrya prakarana of Charaka samhita and Astanga hridaya becomes the main tool for assessment of the drug with respect to pharmacological actions. Paratwa also hints at desha, kala etc.^[1] which can also be applied in selecting a drug. Hence, drug of choice for a particular desired effect, should be viewed in accordance with desha, kala etc. For example; Pippali mula (root of Piper longum) is a drug of choice to achieve deepana appetizer, Pachana(digestant) and anaha prashamana(Anti flatulent) actions.^[1] It will be more effective if it is collected during greeshma ritu(Summer) from Magadha desha(Presently Bihar in India) and used in dry state.

Understanding the pharmacokinetics and pharmacodynamics: Mechanism of drug action in Ayurveda, appears to be vague and usually understood

through reverse pharmacology.^[9] Every drug has three important components viz. Rasa, Veerya and vipaka.^[10] Precise understanding the mode of action of drug begins with the knowledge of veerya. The final effect of a drug is manifested through the predominant guna that emerges at the time of nistha kala. All six rasas are classified into saumya rasa and agneya rasa which culminate into a set of qualities where in one quality will be predominant. This usually occurs after agni vyapara during nistha kala. The set of qualities is otherwise known as vipaka and the predominant quality is known as veerya. The combination of the qualities to a make a particular set varies according to nature of the drug i.e whether the drug is of samana pratyarabdha type or vichitra pratyayarabdha type. The predominant guna will be any one among guru (picchhila), snigdha, sheeta, mridu, laghu(vishada), ruksha, ushna, and teekshna. Based on the agni shomiya siddhanta, snigdha, sheeta, guru, mridu are called as sheeta veerya. While, laghu, ushna, ruksha and teekshna are called as ushna veerya. Veerya is nothing but a quality that gets activated^[11] when the drug comes in contact with the body [nipata] and remains in the active form till the drug gets excreted[Adhivasa].^[11] The final of effect of the drug will be different if the drug has some specific effect of its own [Prabhava].

Table-01: Activated quality [Veerya] and important pharmacological action.

Activated quality [veerya]	Predominance of Mahabhoota	Important pharmacological actions
Ushna	Agni	Dahana,Pachana,Swedana,Vamana,Veerechana
Sheeta	Ap	Prahladana,Vishyandana,Sthirakarana,Prasadana,Kledana, Jeevana, Stambhan
Snigdha	Prthivi & Ap	Snehana, Brimhana, Kledana Santarpana, Vajijkaran, Vayasthapan
Rooksha	Vayu	Sangrahana, Peedana, Virookshana, Ropana, Shoshana
Mridu	Ap& Akasha	Raktamamsa prasadana, Shlatana
Teekshna	Agni	Achooshana, Shodhana, Sravana
Guru	Prithvi& Ap	Brimhana, Upalepa, Tarpana, Balakara
Laghu	Agni, Vayu & Akasha	Langhana

Selection of Anupana: A unique technique is adopted in Ayurveda to deliver the drug to site of action with an appropriate quantity. Anupana enhances the absorption of drug and potentiates the single drug action.^[12] It is used to meet different purposes of therapeutics. Some anupana are used to make the medicine palatable. While, some are specially used to nullify the unwanted effect of the drug. Selection of anupana is very much important in Mono drug therapy [MDT] since same drug can act effectively in different diseases with different anupana. For instance, Guduchi, acts well in vata roga, pitta roga, kapha roga, vibandha, vatarakta and amavata with ghrita (ghee), sita(sugar candy), madhu (honey), guda(Jaggery), eranda taila (castor oil) and shunti(ginger) respectively^[13]

Table: 2, Effective combination of drug dosage form and Anupana used in different diseases.

Drug dosage form	Anupana	Disease
Guduchi swarasa	Takra	Arsha
Pata mula churna	Dadhi	Atisara
Daru haridra churna	Madhu & Tandulodaka	Shweta Pradara
Kamala patra churna	Sitopala	Guda Bramsha
Gokshura Panchang Kwath	Sita & Madhu	Mutrakricchra
Bilva mula Kwatha	Madhu followed by Dugdha	Chardi
Guggulu niriyasa	Ghrita	Shwasa
Vajravalli rasa	Ghrita	Asthibhagna
Karkata shringi churna	Taila	Vataja Kasa
Shigru kwatha	Madhu	Krimi
Vidari kanda swaras	Sita	Pittaja Shula
Ashoka beeja churna	Jala	Mutraghata
Tagara mula churna	Takra	Sandhi Vata
Vacha churna	Madhu	Apasmara

Planning the Time of administration: The drug needs to reach the target site at the right time to benefit the recipient. There is a continuous fluctuation of doshas in the body throughout the day. The variation of particular dosha can also influence the ongoing pathological condition of diseased person. The right time of drug administration with a right anupana not only targets the pathogenesis involved, but also helps in reducing the

exacerbation and relapses of a disease. That's why chrono-pharmacology is appreciated as an important step in the management of a disease.^[14] Drug administered at a right time influences the bioavailability and distribution of the drug. Ayurveda enumerated the time of administration very much scientifically keeping an eye on Vata.^[15] Each one of them has its own rationale to support the concept.

Table-3: Indications of time of administration with drug and anupana for different diseases mentioned in Ayurveda.

Time of administration	Drug and anupana	Disease
Pratha:Kala	Guduchi swarasa with Madhu	Kamala
Pratha: & Sayam kala	Nagakeshar churna with Madhu	Raktapitta
Sayamkala	Jambira swaras	Amlapitta
Pratha:Kala	Khadira sara kalka with gomutra and Madhu	Shlipada
Diwa and Ratri	Yavani churna dharana	Galashundika
Ratri	Shunti kadamba twak kwatha	Raktatisara
Pratha: Kala	Prasarani rasa with Narikelambu	Mutrakrichrra
Pragbhakta	Haritaki with guda	Arsha
Pratha: kala	Tila taila sevan	Ati sthaulya

Deciding a Dose: Undoubtedly, the factors related to patients like age, sex, pathological status, agni, bala and genetics are all important in determining a dose of a drug for Mono drug therapy [MDT]. Classics of Ayurveda have categorically explained as to how a drug and its dose is calculated with regard to the bala of the patient.^[11] But, the factors related to drug such as status of the drug and shelf life of the drug are also pivotal which purely signify the inherent potency of a drug. Acharya Sharangdhara explained certain rules while using raw and dry botanical and the drugs that need to be used in fresh form.^[16] Incorrect dose of drug, sometimes, poses the person to risk which often turns out be life threatening. This usually happens when the drugs such as Vatsanabha, Karpura, etc are given with a dose similar to other drugs. Thus, deciding a dose is a big step in treatment. In some occasions, drug needs to be prescribed at a standard dose for an adult as mentioned in the classics For instance, 16 tola of Kantakari swarasa with madhu is advised for mutra dosha.^[17]

Considering the Shelf life of different dosage form: CCRAS under ministry of AYUSH has published general guidelines for drug development of Ayurveda formulations in 2018 wherein the shelf life of different dosage forms is notified.^[18] Drug used after the period shelf life proves useless due to the loss of inherent potency.

Opting the Route of administration: Drug can be administered through various routes to attain the desired effect. The nearest path to the target site delivers the drug efficiently and precisely. It influences the pharmacological aspects such as absorption, bioavailability, onset of action and duration of action mainly. Drug given through nasya works well in Urdhwa jatru vikara.^[17] But, conversely, Ayurveda recommends few routes that are not near to the site of action in some conditions. For instance, Anjana of Drona pushpi rasa in Kamala^[20] Pada abhyanga to improve the vision.^[21] This aspect needs to be explored while opting a route.

Choosing the duration of therapy: Duration of therapy is all important to bring the aggravated and vitiated dosha to its normal status. Generally, the duration of a therapy depends on the severity and intensity of a disease. Interestingly, some of therapeutic usage of single drugs are specifically advised for a certain period. Vagbhata advised Nimba taila nasya in khalitya and palitya for a period of one month^[22] Bhavamishra acclaimed the usage of Abha churna with madhu for a period of three days in asthi bhagna^[23] As a matter of fact, specific duration of therapy is required to subside the aggravated dosha absolutely to the level of normalcy else there is a chance of developing latency which is otherwise known as leena dosha avastha.

Following Anukta Paribhasha: Selecting a useful part of a plant or plant variety or anupana (such oil or ghee or dugdha or mutra), time of administration becomes difficult when it is not clearly mentioned the authoritative literature. Following the anukta paribhasha explained by Sharangdhara^[24] will resolve the issue.

CONCLUSION

Ayurveda believes that all the plants on the earth has one or the other medicinal value provided the usage should be based on proper strategy. Mono drug therapy [MDT] is specially a disease specific, cost effective and convenient therapy that requires great skill of practice. It works well in early stages of the disease. Unlike Poly drug therapy [PDT], it gives an opportunity to understand the mechanism of drug action more clearly. It also directs the researchers to look for the new drug candidate in the plants. MDT abided by the principles turns out to be an effective approach for treating the seasonal diseases and in elderly people by reducing the drug interaction.

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