

CHARAKOKTA DRUG DEVELOPMENT PROCESS: A CRITICAL REVIEW

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ABSTRACT

Charaka Samhita perhaps is one of major treatise in faculty of *Kayachikitsa* (internal medicine). It deals with aetiological factors, signs and symptoms of diseases and their treatment modalities. Though non-pharmacological interventions are abundantly mentioned in there, various drugs or '*Bheshaja*' are explained in detail. The various types of *Bheshaja* have been described with numerous examples in this treatise. This review is an effort to compile and critically ancient drug development process in *Charaka Samhita*.

KEYWORDS: Drug development, *Bheshaja*, *Charaka Samhita*, Ayurveda.

INTRODUCTION

Ayurveda, the science of life, is an uninterrupted flow of knowledge coming down from generations since eternity along with Vedas. Two streams, viz. *Aatreya Sampradaya* (pertaining to internal medicine) and *Dhanwantari Sampradaya* (pertaining to surgery) were running parallel from ancient times.

Charaka Samhita is one of the greatest outcomes of teachings of *Aatreya Sampradaya*. It is considered as best treatise in faculty of *Kayachikitsa* (internal medicine). The *Charaka Samhita* deals with *Trisootra*, namely *Hetu* (aetiological factors), *Linga* (symptoms and signs) and *Aushadha* (treatment) of various diseases. Though non-pharmacological interventions are abundantly mentioned in there, various drugs or '*Bheshaja*' have absolute majority.^[1]

The herbal, mineral as well as herbo-mineral preparations are found abundantly in *Charaka Samhita*. The origin of Ayurvedic drug development process can be traced in Vedic literature. However, their flourishing is visible in *Charaka Samhita*. In this review, an effort has been made to compile and critically explain the principles and practices of drug development in *Charaka Samhita*.

MATERIALS AND METHODS

The *Charaka Samhita* along and its *Ayurveda – Deepika* commentary by *Chakrapani Dattawas* critically reviewed for this purpose. The references pertaining to principles and practices of drug development were enlisted and studied. Other sources such as scholarly articles, books etc. were also referred if and when required.

RESULTS

Charaka Samhita is filled with practical knowledge crucial for training a physician. To start with, first four chapters of *Sutra Sthana* are dedicated to drugs and are collectively termed as '*Bheshaja Chatushka*'. '*Bheshaja*' or medicine is also included in ten entities to be examined (*Dasha Vidha Parikshya Vishaya*) for treatment.^[2] The importance of drug in treatment is also elaborated by placing it second in '*Chikitsa Chatuspada*' (Quartet of Therapeutics).^[3] There also; its '*Aneka Vidha Kalpana*' or capacity to bear various pharmaceutical forms is emphasized.^[4]

Almost, 2000 drug formulations are compiled in *Charaka Samhita*. Still, it does not allow itself to be limited to a reckoner or handbook of medicine. Rather, a physician has been encouraged and guided to make new upgrades in this field as required.

On one hand, *Charaka Samhita* provides us with excellent formulations like '*Sitopaladi Churna*' that can be used successfully. It also gives food for thought for a curious physician. For instance, in '*Apamarga Tanduliya Adhyaya*', groups of drugs capable of usage for *Vamana*, *Virechana* etc have been mentioned.^[5] There are number of drugs capable of doing one action. It is expected that, the physician has to choose from them on the basis of patient and his disease pattern. The '*Yukti*' or usefulness in a particular condition seems to be the utmost criterion in new drug development according to *Charaka*.^[6]

This concept is still elaborated in fourth chapter of *Sutrasthana*, '*Shad Virechana Shatashritiya Adhyaya*'. Here, five types of *Kashaya* or extract preparations are

described.⁷ It is emphasized that choice of type of preparation depends upon severity of disease & strength of patient. Their indiscriminate usage is to be avoided as they are not all useful everywhere.⁸ Further, 50 drug groups are enlisted in the same chapter. Each group contains 10 drugs having one specific action. E.g., *Cchardighna* (anti-emetic), *Jwaraghna* (anti-pyretic) and so on.

However, it is clearly mentioned that, these lists are like a summary, as there is no limit of expansion. He suggests that, these are for the knowledge of hidden ideas to the intelligent and proficient in inference & rationale.⁹

As per '*Roga Bhishg Jitiya Vimana Adhyaya*', a wise physician is allowed to select and deselect the drug from a group depending on its appropriateness, while making a formulation. The physician is at liberty to add appropriate but unmentioned drugs also. If situation demands, a group may be combined with another or several other groups, based on reasoning.¹⁰

It can be deduced that, this ever-occurring need for a new and customized formulations is chiefly due to '*Prakriti Siddhanta*' of Ayurveda. This tenet states that, every person has a unique body constitution based on individual per se predominance of *Tridosha*. Thus, their medicine must be in accordance with Prakriti, geographical conditions and time. Along with these factors, *Agni* (digestive power), *Aahara* (food habits), *Saatmya* (suitability) and *Vaya* (age) are also to be considered.¹¹

Along with these factors, palatability and inclination of patient are also important. *Charaka* has illustrated its special need in chapter of emetics i.e., '*Madana Kalpa Adhyaya*' of '*Kalpa Sthana*'. In this chapter, various vehicles or adjuvants which can be used with emetic nut according to *Dosha*, disease and inclination of patients are described.¹²

In *Kalpa Sthana* itself, *Charaka* has provided brief guidance for new formulation development.¹³ He suggests that name of new formulation must be based upon principal drug. If antagonistic drugs are used, they must not hamper action of main drug. The need of these antagonists and synergists in a formulation is to augment its action and improve presentation in terms of appearance, taste, feel and aroma and so on.

To decrease the dosage and increase action, '*Bhavana*' or wet grinding is instructed. This *Bhavana* process has been extensively advocated and modified by later texts such as *Sharangadhara Samhita*, that helped further advancement of Ayurvedic pharmaceuticals. In the end, there is the most important theory, which has proven to be base of Ayurvedic pharmaceuticals i.e., *Rasashastra* and *Bhaishajya Kalpana*. Here, 5 important rules or principles of new drug development are described.

The principle of *Samshlesha* describes about combining

synergistic drugs to augment action of formulation. The *Vishlesha* principle is about combining antagonistic drugs to control one's or each other's action. Use of *Kala* or desired time, such as day/night, time for harvesting of herbs, time for drug administration etc. has been advocated. An important principle of *Samskara* is useful in augmenting the action of ingredients by doing certain processes to bring new qualities in drug. Lastly, *Yukti* i.e., ability of physician to place or remove drug in formula is mentioned. This is the virtue by which, a new formula can be perceived, prepared and used understandably.

CONCLUSION

Thus, *Charaka Samhita* focuses on concept of new drug development. This core knowledge is foundation for many successor texts. By the indication given by great *Charaka*, every physician is able to develop a desired formula for his patient. Thus, *Charaka* insists that, a treatise must be not too brief and not too wordy in information. Only the true knowledge is desired. The conversion of 'information' into 'knowledge' is thus, sole responsibility of physician himself.

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