Introduction
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Ayurveda is a pramāṇaśāstra, the closest translation of which would be a \textit{science that is verified and true beyond any doubt}. Pramāṇa (pramākaranam pramāṇam) is a tool for obtaining true knowledge and śāstra (śasyate trayate anena iti śāstram) is a dictate that guides. Thus, pramāṇaśāstra would mean a dictate that is verified and true beyond any doubt. Contemporary scientific method used for obtaining knowledge is characterized by three things viz., testability, verifiability and reproducibility, which is true in case of Ayurveda as well, but the difference is in the tools used for obtaining knowledge and in the nature of knowledge. The tools for obtaining knowledge in Ayurveda are four viz. āptopadeśa, pratyakṣa, anumāna and yukti. Although all the four are used by contemporary science as well, their scope and reliability is differently ascribed. Firstly let us consider the scope of each of these tools, Ayurveda (as is in all oriental knowledge systems) considers āptopadeśa (knowledge that has descended from peers, divine sources or elders) as the most significant, irrefutable and unquestionable knowledge, whereas pratyakṣa or knowledge derived from the senses is considered less significant, refutable and questionable. However, in contemporary sciences, it is the other way round; āptopadeśa is open to further scrutiny and in many instances major breakthroughs in the field of modern science have led to the complete disapproval of past held notions and beliefs.

Let us now look at the reliability of these tools in both the knowledge systems. Ayurveda considers the knowledge derived from all the senses (pratyakṣa) to be valid and reliable if it has been made with an objective mind (unbiased and sound mind guided by appropriate knowledge and necessary practical wisdom), whereas contemporary science considers any such knowledge as subjective and therefore biased and unreliable. The nature of knowledge considered to be valid in contemporary science are characterized by quantifiability and verifiability, as they are

\footnote{When Nicolas Copernicus (1473 – 1543) put forth his heliocentric theory (sun as the centre of universe), it wiped out the deep-rooted belief valid till that time viz., geocentrism (earth at the centre of universe).}
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typically numbers (like height, weight, age or blood pressure) or a continuous function (specific gravity of body fluids) or perceivable through more than one sense organ (like shape and size of an object can be seen as well as felt), and permeates the entire object (like mass which is present in every minutest part of the object) whereas a knowledge like taste (which is perceivable through only one sense organ viz. tongue) is not considered that much reliable; incidentally it also does not permeate the entire object. For example, mango will taste differently as you go from its skin to pulp to seed and to core. However Ayurveda considers such knowledge to be reliable and relies on them extensively, thus making it fundamentally different from western bio-medicine.

The study of substances, known in Ayurveda as dravyaguṇavijñāna, classifies all medicines on the basis their rasa (Taste), guṇa (Quality), vīrya (potency), vipāka (nature of its metabolite) and prabhāva (an action characteristic). All these entities do not possess the characteristics that typify reliable knowledge in western bio-medicine like measurability, quantifiability or are neither numbers nor are continuous functions, and hence are not as yet accepted as valid tools for understanding substances.

Physiology in Ayurveda rests on the pillar of the tridōṣasiddhānta (postulate of three doṣa-s or vital humors – vāta, pitta and kapha). Every aspect of health and disease in Ayurveda is explained on the basis of these three entities. In fact it can safely be said that such a unified theory of health and disease is unique to Ayurveda. But again, the doṣa-s cannot be measured or quantified in terms of numeric value.

Another fundamental concept in Ayurveda is the concept of prakṛti, the constitution of a person, which is understood by a vaidya after considering numerous physical and mental attributes. But this also cannot be measured or quantified in terms of a numeric value, wherefore these (doṣa and prakṛti) cannot be expected to be acceptable as a valid means of knowledge in the current scientific realm. However, the fact that these cannot be expressed in terms of a number does not actually mean that they are not
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quantifiable; the doṣa are measured (or quantified) on the basis of the intensity of their function in the body (reflected through various signs, symptoms or traits) and the prakṛti is quantified by the intensity of the characteristics that characterize them. Since Ayurveda considers such tools as valid, it (Ayurveda) has been founded on the basis of these concepts and has gone on to comprehensively lay out the principles they are governed by to understand and utilize them for maintaining health and curing diseases.

In a broad sense Ayurveda is an extremely pragmatic science that concerns itself mainly with functions and mechanisms within the body (understood on the basis of the three doṣa-s) and ways and means to change, modify or maintain these functions. The fact that these entities cannot be measured in numbers or are subjective does not prevent Ayurveda from using them for all practical purposes. The advantage here is that, if correctly applied, they are able to effect a functional change for the better within the body without harming it any manner. In allopathy, health is constructed with the help of clearly defined structure/measurement within the body and disease as a deviation from normalcy in the structure/measurement. Medicine (all of which are chemical entities) is aimed at reversing this defect. The advantage here is that such a medicine is extremely effective in relieving the symptom caused by the defect and acts very quickly, however since the medicine is formulated for effecting a desired change in a particular part of the body, it may have an undesired effect in another part of the body. Alleviation of aliment and mere relief from symptom are two different entities. In other words Ayurveda understands and treats human body through functional theories and allopathic medicine on structural theories; both have their own distinct advantages.

The structural understanding of Allopathy played a significant role in its success over the last century in the fight against communicable diseases, all of which were deducible to their microbial cause where the strategy was to identify the cause and counter it through specific targeted chemicals, revolutionized with the discovery of
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antibiotics. However, now the burden of disease has undergone a dramatic shift, communicable diseases is no longer the major cause of mortality or morbidity and majority of them have known cures but the world is grappling with newer health problems of unprecedented nature and complexity. World Health Organization predicts that non-communicable conditions will cause over three quarters of all deaths in 2030. Globally, death from cancer will increase from 7.4 M in 2004 to 11.8 M in 2030, and deaths from cardio-vascular ailments will rise from 17.1 M to 23.4 M in the same period. By 2030, deaths due to cancer will collectively account for 56% of the predicted 67 M deaths due to all causes. There is thus a shift of disease burden from communicable to non-communicable, indicative of a paradigm shift in the demographic pattern of the human population. These diseases are characterized by multi-factorial causality that does not have an underlying microbial cause. The derangement of functions within the body may occur due to multiple causes like diet, lifestyle or environment, and the resultant disease in such a case is typically characterized by gradual progress (with a relatively symptom-less initial phase) and complex manifestation involving more than one organ system and chronicity (a long standing nature). Some typical examples of these diseases, which are now being referred to as Chronic Metabolic Disorders are Diabetes, Hypertension, Arthritis, Cancer etc. It is now becoming quite evident that, there can never be a one drug wonder cure for any of these diseases and that they have to be tackled through a multi-dimensional strategy involving dietary changes, lifestyle modifications, changes in one’s immediate environment and medicine, which is precisely the forte of Ayurveda. Hence, we see today that patients suffering from these disorders, at least in our country, are turning towards Ayurveda for help.

Ayurveda is undoubtedly better placed to counter these challenges precisely because of its holistic approach to disease management involving specific dietary advice, suitable lifestyle modifications and of course medicine (which can either be palliative (śamana) or purifying (śodhana)). To elaborate, Ayurveda is better placed because of the theories of disease and health have been constructed here by accommodating

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2 Sir Alexander Fleming (1881-1955), a Scottish biologist and pharmacologist discovered the first antibiotic substance penicillin from the fungus Penicillium notatum in 1928, for which he got the Nobel Prize in Medicine in 1945
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the various factors like the living systems, environment, behavior, lifestyle, diet etc. that influence these two entities. Through the tridoṣaśiddhānta, Ayurveda has analyzed these complex inter-relation between these factors and devised a know-how to positively use these multiple factors to our benefit.

With this background, it is important to recognize that the principles of Ayurveda particularly of that of the tridoṣas needs to be critically studied, researched as it is becoming more and more evident that this understanding holds the key to addressing multi-factorial new age healthcare challenges like Metabolic Syndrome, Rheumatic Diseases etc.

In this context, we find that Ayurveda as it practiced today is being subjected to mindless strictures, in the name of scientific rigour, that is threatening to derobe it of its holistic framework which is actually its greatest strength. The repeated attempts in the last few decades to identify a single drug from among multiple formulations told in Ayurveda for a particular disease and testing them in placebo-controlled RCTs have met with little or no success. This demonstrates that the real strength of Ayurveda is not its ability to provide a wonder formulation; rather it is its remarkable principles of health and disease.

It was therefore very relevant to attempt to develop a treatment regimen (SCP) for Ayurveda clinicians that accommodate the holistic approach of Ayurveda that includes the multiple components of management like diet, life-style, medicine and yoga. The present study was aimed at developing such a protocol taking one disease viz. Vatarakta as an example. Vatarakta was chosen as it was a classic case of progressive metabolic derangement that is caused by a multitude of factors like faulty diet, improper lifestyle etc. The Ayurvedic response (treatment) to this disease is also a classic example that is characterized by the application of the holistic principles of Ayurveda.

The developed SCP was peer-reviewed and further fine-tuned through clinical application in around 150 subjects. This dissertation deliberates on review of literature pertaining to the disease and its management, the process of development of the SCP, observations during clinical evaluation, discussion on relevant points and conclusions drawn from the study.