

SIGNIFICANCE OF ANGULI PRAMANA IN AYURVEDA

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ABSTRACT

The words 'Pramana' and 'metry' are related to measurement. *Anguli Pramana* described in *Ayurveda* for examination of patient. The *Pramana* of different part and subpart of the body has been mentioned in *Ayurvedic Classics*. Need of Measurement was the prime necessity for human being since the history. In ancient era of human beings, *Ayurveda* is most important system of medicine in which one of fundamental of *Anguli Pramana* which is of anatomical significance. An ample reference from the *Samhitas* shows that *Anguli Pramana* is one of the criteria used in the examination of the person & patient. It helps in determination of the life span, strength and health of the person, prognosis and diagnosis of disease too. *Swā* (one and one fourth) *Anguli* is the unit measurement seems to be more natural and scientific method. *Ayurveda* has given importance to individualistic approach rather than a generalized one.

Keywords: *Pramana Sharir, Anguli Pramana, Anthropometry.*

INTRODUCTION

In *Ayurveda* the *Sharir* is given prime importance. This complete knowledge about *Sharira* at all times is very much essential for a physician in order to provide a healthy life for mankind. In all major *Samhitas*, give description of human body in both Anatomical and Physiologically. All the major *Samhitas* have a separate section of *Sharira Sthana*. But also other point of view for various clinical examination and valuable parts also describe in other part of *Samhitas*. *Anguli Pramana* is one of the important concepts in *Ayurveda*.

The *Ayurvedic* classical literature is documented along with many hypothetical concepts. An *Anguli Pramana* one of them. The *Sharir Pramana* is only tool for determining the *ayu* of an individual. This complete knowledge about *Sharira* at all times is very much essential for a physician in order to provide a healthy life for mankind.

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Aim and Objectives:

- To explore the concepts related to anthropometry in *Ayurvedic Samhitas*.
- To explore the fundamentals of *Anguli Pramana* for clinical practice
- To establish relation between modern anthropometric and according to *Samhitas Anguli Pramana* for various scope of development and research in this field.

Material AND Methods:

- Reviewing of *Ayurvedic* classics including relevant commentaries regarding the concept of *Anguli Pramana*.
- Review of all available literature related to modern anthropometry.
- Reviewing of internet materials, journals, periodicals and previous research papers related to this subject.

CONCEPT OF ANGULA PRAMANA IN AYURVEDA

Ayurveda is a system of health science which not only includes the knowledge of body and disease but also includes the way of living i.e *Swastha*. To achieve such goals there should be knowledge of body (*Sharir*), body parts (major parts-*Anga* & minor parts- *Pratyanga*) and their *Pramana* (Anthropometry). The concept of *Pramana* is one of the significant contribution of *Ayurveda*. There are basically two types of *Pramanas* that we find in *Ayurvedic* classics, one is *Anjali Pramana* and the other one is the *Angula Pramana*. *Angula Pramana* is specially described in *Ayurveda* which is an important part of *Rachana Sharir*. *Angula Pramana* is used for the Anthropometry measurement of human body that means measurement of height and weight where Acharya Charaka, Sushruta and Vaghbhata have given different values of human height which is 84 *Angula* , 120 *Angula* , 31/2 *hastha* respectively

Various references from the *Samhita* show that *Angula Pramana* is one of the criteria used for the examination of patient. It helps in determination of the life span, physical strength and health of the person. *Angula Pramana* is determined by measuring the height (*Utsedha*), length (*Ayam*), breadth (*Vistar*) & circumference (*Parinah*) of *Pratyangas*. Here fingerbreadth of the individual (i.e.*Swa-Angula*) is used as the reference unit of measurement. If an individual possesses *Pratyangas* measuring exactly similar with standard *Angula Pramana* he or she is considered to have *Pramanvat Sharir* (proportionate body). Acharya Charak in 8th chapter of *Vimanasthan* stated that, a body possessed of body parts having proper measurement is endowed with longevity, *Bala* (strength), *Oja*, happiness, power, wealth and virtues. Whereas the difference between *Ayam* &*Vistara* increases or decreases, the benefits of all above criteria will be more or less respectively

SIGNIFICANCE OF ANGULI PRAMANA:

Acharya Charaka has included *Pramana* among the *Dashavidha parikshyabhavas*. *Ayupariksha* is an important procedure before starting with the treatment. *Ayupariksha* is done particularly on the basis of measurement of different *Angapratyanga* of the body. Thus *Pramana Pariksha* plays an important role in assessing the ayu of the individual. The assessment and classification of *Sharirik Bala* (immunity) i.e. *Uttam Bala* (Good immunity) *Madhyam Bala* (moderate immunity) can be examined with the help of *Anguli Pramana*, is commented in the following sutra
The *Aayaam* of the entire body should be 84 *Angula* and *Aayaam* should be equal to *Vistaar* of the body. The person having *Aayaam* (vertical height) and *VisTaar* (Arm span) equal to each other is known as *Sama Purusha* (Anatomically proportionate healthy person) and these Person will have *Uttam Ayu* (longevity), *Bala Oja*, *Sukha*, *Aishvarya*, *Vita* (wealth). The Person having *Anguli Pramana* morethan 84 *Angula* or less than 84 *Angula* will have *Ayu*, *Bala*, *Oja*, etc. *Madhya* (moderate) or *Heen* (Poor).

The Physician before commencing treatment , should first of all examine his *Ayu* (life span); if he has long life span then his *vyadhi* (disease) *Ritu* (season), *Agni* (digestive power), *Vayah* (age), *Deha* (body build) *Bala* (strength) *Satva* (mind), *Satmya* (habitual customs), *Prakrity* (constitution), *Bhesaja* (drug) and *Desh* (habitat) should be examined.²

Sushrut Acharya has described *Anguli Pramana* for assessing life span and economic status of individual. Thus, the body has been described (in term of measurement) with his own fingers. If man and women is endowed with the measurement, he attains long life and prosperity, with medium and inferior features, the attainment is also accordingly e. g. medium and inferior respectively.³

The expert physician succeeds in his work if he proceeds after examining the lifespan particularly on the basis of measurement of part and sub part of body and essential predominance of *Dhatus* etc.⁴ In this sutra *Acharaya Susruta* described now for the knowledge of life span, measurement of part and sub part of the body and saras (predominante *dhatu* and psyche) will be described⁵. The patient or individual having appropriate *Pramana* of different *Angapratyangas* mentioned is considered to attain *Deerghayu* and *Vittha* and those with moderate and poor measurements attain *Madhyama* &*Alpaayu* respectively. A patient constitutes the karyadesha or the site for the administration of therapies with a view to bringing about equilibrium of *Dhatus*. He should be examined so as to obtain knowledge regarding the span of life, strength and the intensity of morbidity, because it is on the basis of the intensity of morbidity that the dosage of the therapy is determined and the latter is dependent upon the strength or the power of resistance of the individual. If strong things are immediately administered without proper examination, to a weak patient , that might result in his death. Weak patient are incapable of resisting strong therapies like medicaments dominating in *Agni* and *Vaya Mahabhatas*, application of alkalies and heat(cauterization) and surgical operations. These therapies cause immediate death of the patient because of very sharp action which are very strong for the individual. Thus a weak patient should be given such mild and tender therapies as they are not injurious to the body and mind. Stronger therapies which are neither distressing during there digestion nor associated with serious complications may be administered slowly and gradually. Such therapies are specifically needed for females because they are by natural unsteady, light (not deep) and of sensitive or weak treatment and also because they are mostly tender and sub ordinate to others. Similarly, if weak therapies are administered to a strong individual having a serious disease without proper examination, the disease dose not get cured.⁶

Therefore, the patient should be examined with reference to his *Prakriti*, *Vikriti*, *Sara*, *Samhana*,*Pramana*,*Satmya*, *Satva*,*Aharasakti*,*VyAyamsakti* and *Vayas* in order to ascertain his strength and intensity of the malady.⁷

Thus the strength of individual can be classified depending upon the superiority, mediiority and inferiority of the above mentioned factors, viz.*Prakriti* etc., except *Vikrti* or morbidity. three type of the strength of the *Dosas* are inferred from the three type of medicaments ,viz. strong, mild and moderate should be administered. Achaya *Vagbhat* has described the significance of *Anguli* in the following sutra:

"The entire body is thus Eighty four *Angula* in length ;it is equal both in length and breadth; the size mentioned so far of each part of the body is desirable (normal); whereas the less or more of these is undesirable(abnormal)⁸

MODERN REVIEW:

History of Measurement⁹

Units of measurement were among the earliest tools invented by humans. Primitive societies needed rudimentary measures for numerous tasks such as: constructing dwellings of an appropriate size and shape, fashioning clothing, or bartering food or raw materials. Other systems were based on the use of parts of the body and the natural surroundings as measuring instruments. Ancient Indian measurements related to the body are correlated to the finger measure of 1½ inch. This measure is found throughout the human body in increments. It is the measure used to build ancient temples and is precisely related to the Indus Valley measuring devices. Early Babylonian and Egyptian records and the Bible indicate

that length was first measured with the forearm, hand, or finger.

Anthropometry:¹⁰

‘Anthropos’ means man and the science deals with man are known as anthropology, and the science of measuring the body parts constitutes Bertillon’s system or anthropometry, introduced by Alphonse Bertillon, a French police officer. This system was used in United States in early 1900s

The anthropometry is the means of quantifying variation in the body size and shape. It is also one of the fundamental techniques of human biology as most of the biological functions are in some way related to one or the other aspect of the physical dimensions of the body

Anthropometry can be defined as “A systemized body of techniques of measuring and taking observations on man, his skeleton, the skull, the limbs and trunk etc as well as the organs, by the most reliable means and scientific methods

For the sake of convenience anthropometry may be subdivided into

- 1) Somatometry: - Measurements of body morphology.
- 2) Osteometry: - Measurement of skeleton and its parts.
- 3) Physiometry: - It deals with measurement of physiological functions of the body and constitutes important adjunct of anthropometry.
- 4) Anthroscopy: - An analog of anthropometry, is the visual observation and description of physical traits not capable of exact measurement. E.g., form & character of hair, skin color etc.

Measurements and its types

The term measurement generally refers to the act of measuring, and in context of anthropometry it refers to a definite measure between two clearly defined landmarks, and the term measure refers to dimension of a clearly defined distance between two specified points, and in the context of anthropometric work landmarks or points is always related to bony points.

Examples:-

- 1) Linear measurement- It is the measure of vertical distance between the surface landmarks. E.g. Hand length, foot length, facial height,
- 2) Transverse measurement- It is the measure between two landmarks perpendicular to linear axis. E.g. Head breadth, biorbital breadth,
- 3) Circumferential measurement- these measure the circumference of different parts of the body. e.g. Upper arm circumference, head circumference,
- 4) Angular measurement- These measure the profile of a particular part of the body with respect to two landmarks linearly distanced from each other. E.g. Facial profile angle,
- 5) Skin fold measurement- these measure the thickness of the fold of subcutaneous fat. E.g. Skin fold thickness at biceps, triceps.

Applications of Anthropometry

The technique of anthropometry has application in many areas of human concern and welfare.

It is proposed to enlist some of more important applications of the science of anthropometry

- 1) Morphological differences within and between populations may be demonstrated by comparing anthropometric results statistically.
- 2) It provides opportunity for identification of individuals and departed populations i.e. helpful in understanding the ethnic affinities between populations.
- 3) To study the evolutionary changes, inter-population and intra-population differences.
- 4) It forms a basis for a clear understanding of comparative anatomy of primates particularly those closer to man.
- 5) Has major application in the field of forensic science for identification of an individual also helpful in determination of age, sex.
- 6) The study of the processes and patterns of human growth and development is another area where anthropometric techniques are basically used.
- 7) The general standards of health can be evaluated by using composite measurements like height and weight.
- 8) Found quite useful in the field of orthopedic surgery, particularly in the preparation of artificial limbs.
- 9) It has definite application in the field of Eugenics, in which promotion of better trait in future generation is mainly considered.
- 10) Extremely helpful in evaluating the physique and the constitution suitable in different sports specialty.
- 11) In the field of genetics it is helpful in evaluating the zygosity of twins.
- 12) In recent years anthropometric measurements and standards are being used in industry- designing, shoes, gloves, seats in aeroplanes, railway, buses, helmets, manufacture of artificial limbs etc.

DISCUSSION:

Ayurveda, the knowledge of life is the collection of centuries of accumulated wealth of knowledge pertaining to the human body, its functioning, the ways to maintain its healthy state and to correct the deviations from its normal state which are the diseases occurring in various forms, by scientific method which is based on logic and repeatability using

available resources of that period. The knowledge of *Ayurve- da* can be summarized as the knowledge of *Hetu* or the cause of disease, *Linga* or the *Lakshana* or symptoms of disease and the *Aoushadha* or the management of the disease, either or medical or procedural. These are called the *Triskandha* or *Skandha Traya* of *Ayurveda*. Thus the purpose of entire attempt at developing the knowledge of *Ayurveda* was for the maintenance of health of the healthy and to cure the diseases that occur. In order to cure any dis- ease, it has to be first identified and this is done by the process of *Pareeksha* or examination. *Dasavidhaaatura Pareeksha* or tenfold examination of patient gives an overall idea about the diseased person from his general nature to the context in which the person has been affected by the disease. From an anatomical perspective, the *Dasavidha Pareeksha* can be considered to be the observing of how much the diseased person is 'different from normal'. To understand the deviation from normalcy, what is normal has to be understood and there comes the role of subjects like anatomy. Among the *Dasavidha Pareeksha*, the examinations of the *Sara*, *Samhanana* And *Pramana* require some back- ground anatomical knowledge. *Sharira Pramana* or measurements pertaining to the body have been described elaborately in all major *Samhitas* giving us an insight into the level of knowledge and understanding of the human body that existed during the period when the *Samhitas* were written. One of the important contribution of our *Acharyas* in this aspect was how they devised a suitable measuring unit for the measurement of the human body in an era where neither standardized measures nor measuring instruments were in general use, which not only provided a unit for measuring, but also provided the flexibility of being personalized, i.e. being specific for each individual. The concept of using 'Anguli' or the average breadth of a finger as a unit of measure can be observed to be a modified form of expressing the measures some modern researches also shows the causes of different proportions of body measurement and that's prognosis for health this is only one example of research in current centuries for how to use the *Ayurvedic* fundamentals for the use of public health.

CONCLUSION:

Anguli Pramana is a better tool to describe measurements compared to absolute measurements. It gave in the first place, a unit of measurement. It was personalized as it differs from individual to individual. It was standardized because the result measured was not an absolute value but a ratio between the length of the part measured to the *Anguli Maan*. This also shows to the modern scientific world the advanced state of *Ayurvedic* anatomy and thus *Anguli Pramana* can become a proof of what we can contribute to the modern community from what we can learn and comprehend from the study of our ancient literatures. New *Ayurvedic* indices may be discovered, analyzed and incorporated into the *Ayurvedic* clinical examination proforma to improve *Pramaan Pareeksha* and *Aakriti Pareeksha* described in *Dusvidha* (tenfold) and *Ashtvidha Pareeksha* (eightfold) and to give them mathematically representation for objective analysis to replace the current subjective assessment. Anthropometric data can be used to evaluate unknown body measurements from known measurements. This is highly significant in developing concepts related to forensic medicine in *Ayurveda*, a perfect example in this regard being estimation of total height from various known measurements based on references of *Pramana Shareer*. No two individuals are completely alike physically, physiologically, psychologically or in vital reaction. In past era when a single measurement technique was not as like modern era (e.g. cm, mm, etc.), there was only *Angula Pramana* method to measurement of body parts. The *Angula Pramana* of different parts and sub-parts of the body has been mentioned in *Ayurvedic* classics. Hence, *Ayurveda* has individualized the concept of health. With the help of the *Angula Pramana* we can differentiate abnormal from normal and can plan /management for abnormalities. Hence measurements of the body parts may get an importance. Therefore, concept of *Ayurveda* in relation to the *Angula Pramana* got individualized. Thus, we can see concepts of anthropometry are described in *samhitas* at places with significant elaboration which shows concept of anthropometry in *Ayurveda* and shows the path for further illustration for better use.

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