

Research Article

Measuring Tridoshas in Cancer Patients - A Pilot Study

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Abstract

Background: Ayurveda asserts that, the increase or decrease in the status of tridosha (Vata, Pitta, Kapha) is the cause for the manifestation of all the diseases. Cancer is explained as Arbuda and vata and kapha vriddhi (increase) is referred as cause by Ayurveda classics. Studies are available on the relationship between prakrti (constitution) of an individual and diseases. No studies are available on vitiation of tridosha.

Method: Design of the study was descriptive type. Sampling design was purposive sampling. Tridosha diagnosis scale (TDS), interviewer based, which consists 97 items: for Vata vriddhi, 14 items for Vata kshaya: 16 items for Pittaja vriddhi, 11 items for Pitta Kshaya: 20 items for Kaphaja vriddhi and 15 items for Kapha kshaya: was developed which had reliability above 0.7 for all subscales of TDS. TDS was administered on 5 cancer patients, (three were lung cancer, two were of liver cancer) recruited from Arogyadhama hospital of SVYASA university, Bangalore.

Results: It was found that, there were more vata vriddhi and kapha vriddhi laskhanas in cancer patients (more than 40%) in both vata vriddhi and kapha vriddhi scales.

Conclusions: The present study has given good basis for further study on larger samples to confirm statistically the findings of study which may in turn may point for specific plan and diet regime based on tridosha.

Keywords

- Tridosha
- Vikrti
- Vāta
- Pitta
- Kapha

INTRODUCTION

Cancer may be regarded as a group of diseases characterized by an i. abnormal growth of cells ii. Ability to invade adjacent tissues and even distant organs [1]. Derangement of controlling system, homeostatic system, altered gene expression are the biological basis of the cancer (In cancer genes controlling DNA damage and repair are affected) [2].

Ayurveda, vedic medical science, is essentially based on tridoshas -Vata, Pitta and Kapha. Metabolic principles which control the function of soma and mind. Definition of healthy person according to Ayurveda is in whom there is equilibrium of doshas, dhatus, malas, tranquility of mind, blissfulness which is similar to WHO definition. Ayurveda proclaims- rogastu dosha vaishamyam, dosha samyam arogataa - vitiation of dosha is disease, equilibrium of doshas gives health. Accordingly Ayurveda recommends specific diet and daily regime for different types of personalities to maintain health.

Ayurveda typologies of diseases are based on tridoshas. The treatment principle of Ayurveda is individualistic and depends on the predominance of dosha which is involved [3-10].

Ayurveda scriptures elucidate cancer as 'Arbuda', severity of granthi (abscess) and hypothesize pathogenesis of cancer as the results of increase in Vata and Kapha, which in-turn vitiates mamsa (muscle tissue), rakta (blood), medo (lipid tissue) dhatu and results in the manifestation of granthi or arbuda [3].

There are six types of arbuda - Vataja, Pittaja, Kaphaja, Raktaja, Mamsaja, Medoja and the method of management of the different types, are unique. For example: for vataja arbuda sweating - sweda treatment is given and for pittaja arbuda virechana - purgation is given.

Studies have discussed the importance of Ayurveda [11], Tridoshas [12-15]. A Statistical model of Dosha Prakrti based on analysis of a questionnaire has been developed [16]. An analysis of Tridoshas physiology, linking it to process of cellular physiology has been carried out [17,18]. Similarly a genetic basis of Tridosha constitution has been postulated [19-22]. A study comparing the Āyurveda personality concepts and western psychology concepts is available [23]. Ayurveda Tridosha theory and four elements of Buddhist medicine, Chinese humorology have been compared [24,25]. Importance of Prakrti in aging has been discussed [26].

Effects of isotonic exercise on different type of Prakrti have been observed [27]. Differences in metabolism of different prakrti have been explained [28]. Left and right hemisphere chemical dominance has been observed with predominance of doshas [29]. A scale to measure tridoshas in psychotic patients has been developed [30]. Child Personality inventories to measure tridoshas in children has been standardized [31,32]. Studies have demonstrated the efficacy of Ayurveda drugs like Withenia, curcumin etc on cancer [33-38].

The objective of the present study was to develop an interviewing scale for measuring vitiation of tridoshas and measuring the status of tridoshas in cancer patients.

NEED FOR THE PRESENT STUDY

Concepts of ancient Ayurveda are based on prakrti-constitution and vikrti-vitiation of doshas which play a major role in planning of the treatment. Diagnosis is very important step in management of a disease. Once the dosha involved in the disease is diagnosed diet pattern can be advised accordingly along with specified drugs for each doshas. For example-if vata is predominant, one should avoid bitter, spicy, astringent taste foods, he can consume sweet, sour, salty foods.

According to conventional medicine there are many categories of cancer based on the organ involved and state of cancer. If we can classify the varieties of cancer based on tridoshas, specific drugs and panchakarma-vamana (emesis) for kapha, virechana (purgation for pitta), basti (enema) for vata can be administered and clinical significance can be established.

By literature review, there are studies on Ayurveda drugs on cancer, but not on Ayurveda diagnosis. So, we have taken this current study to establish Ayurveda diagnosis.

METHODS

There were two objectives of the study.

1. To develop a tridosha diagnosis scale
2. To measure tridoshas in cancer patients

It is an Observational, Descriptive type of study. The study has the design of co-relational study, in which the relationships between the three variables are studied. This is one time interview based assessment. Sampling design is purposive sampling.

Development of tridosha diagnosis scale

The tridosha diagnosis scale (TDS) developed based on hundred and ten Sanskrit characteristics from nine authoritative ancient Ayurveda texts describing characteristics typical of *Vātaja*, *Pittaja* and *Kaphaja* vriddhi, kshaya (characteristics of increased or decreased doshas). Item reduction was carried out by deleting the repeated items, ambiguous items,

110 items, describing vriddhi, kshaya lakshana of Vata, Pitta and Kapha were collected, and translated to English. They were presented to ten Āyurveda experts for content validity. They were asked to judge the correctness of each statement and to check

1. If the items constructed represented acceptable

translation of the Sanskrit in the original texts.

2. Whether any of the items were repeated or if any item should be added?
3. Whether the features of *Vātaja*, *Pittaja* and *Kaphaja vikrti* selected for the scale is correct

Based on their comments some of the items were selected, some of items were removed, some changed and refined. Finally 97 questions of TDS were framed. The scale was again presented to five Āyurveda experts and one psychologist who reviewed the format of this scale and recommended a two point scoring (0 and 1); this was adopted in the final TDS.

Data collection and analysis

Item difficulty level was analyzed by administering the scale on 10 samples of the age group 25-52 years.

For testing the reliability and validity, the final scale of 97 items was administered on 30 subjects from Arogyadhama of SVYASA, University, Bangalore, of both sex with an age range of 25 to 52 years. Subjects with the history of Diabetes, Back pain, Knee pain, Acidity were included in the study. The patients with chronic illness, Cardiac diseases were excluded.

Measuring tridoshas in cancer patients

TDS was administered on 5 cancer patients

Three patients who were diagnosed as having lung cancer 1st stage,

Two patients who were diagnosed as having liver cancer 1st and 2nd stage from Arogyadhama of SVYASA, University, Bangalore were included in the study.

RESULTS

Content validity

Amongst ten experts, who served as judges 97 questions were agreed by all.

Internal consistency

An analysis of the data collected from 30 samples showed the Cronbach's alpha is at acceptable range [28].

Correlation results

Vata vriddhi correlated significantly negatively with kapha vriddhi (-0.892), vata kshaya (-0.62) and positively with kapha kshaya (0.375)

Pitta vriddhi correlated significantly negatively with Pitta kshaya (-0.457) and positively with kapha kshaya (0.909)

Kapha vriddhi correlated significantly negatively with Vata vriddhi (-0.892), kapha kshaya (-0.472) and positively with vata kshaya (0.439).

DISCUSSION

The current study has described the measurement of status of tridoshas in cancer patients after developing a 97 item tridoshas diagnosis scale.

Items were generated from Sanskrit statements described in authoritative texts of Ayurveda. Content validity was established by taking opinion of ten Ayurveda experts.. The reliability of subscales of TDS was supported by the Cronbach's- α coefficient and the split half analysis. This provided the evidence of stability over items. (Table 1,2)

Applying the scale on cancer patients it was found that there is more vata vriddhi and kapha vriddhi lakshanas, compared to pitta vriddhi which in turn supported the concurrent validity of the scriptural information.

Strength of the study is it is the first attempt to develop a scale to measure vikrti and applying on cancer patients. Measuring the vitiation of tridosha is an important part, as it plays role in treatment plan and diet regime and it is mentioned in scriptures that nidana parivarjana (avoiding the cause is the main treatment plan, for which diet regime is helpful according to the vitiation of doshas.

LIMITATIONS OF THE STUDY

Though TDS is associated with good reliability, application of scale on cancer patients is not supported by statistical analysis and sample size is less.

CONCLUSIONS

The present study has given good basis for further study on larger samples to confirm statistically the findings of study which may in turn may point for specific treatment plan and diet regime based on the vitiation of vata and kapha.

Table 1: Reliability coefficients of the tridosha subscales.

Subscales	Cronbach's alpha for vriddhi	Cronbach's alpha for kshaya
Vata	0.939	0.945
Pitta	0.853	0.867
Kapha	0.942	0/785

Table 1 gives the reliability coefficients of Vata, Pitta and Kapha subscales ranging above 0.7

Table 2: Split half reliability coefficients of the tridosha subscales.

Subscales	Split half reliability for vriddhi	Split half reliability for Kshaya
Vata	0.927	0.962
Pitta	0.883	0.848
Kapha	0.960	0.688

Table 3: Scores of cancer patients.

Vata	11.4±1.4 (45%)
Pitta	5.4±.4 (9%)
Kapha	9.8±0.8 (45%)

Table 3 gives mean and SD values of five subjects in tridosha diagnosis scale P<0.5.

REFERENCES

- Park K. Preventive and Social medicine. 20th edn. Jabalpur: Banarasidas Bhankot publishers. 2009.
- James F, Holland, Emil frei III. Cancer medicine. 2nd edn. Philidelphia: LEA&FIBER. 1982.
- Tripati R. Ashtanga sangraha: Hindi commentary. 2nd edn. New Delhi: Choukamba publications. 2001.
- Tripati B. Ashtanga Hradaya: Hindi commentary. 2nd edn. New Delhi: Choukamba publications. 1997.
- Panday GS. Charaka samhita: Hindi commentary. 5th edn. New Delhi: Choukamba publications. 1997.
- Shastry KA. Sushruta Samhita: Hindi vyakhya. 15th edn. New Delhi: Choukamba publications. 2002.
- Brahmashankaramishra. Bhavaprakash: Hindi Vyakhya. 10th edn. Varanasi: Chaukamba smaskrita bhavan. 2002.
- Pandit Parashram shastri. Sharangadhara samhita: Samskrita vyakhya. 6th edn. Varanasi: Chaukamba Orientalia. 2005.
- Krishnamurthy KH. Bhavaprakasha: English commentary. 1st edn. Varanasi: Chaukamba Vishwabharati. 2000.
- Pandit Hariprasad Tripati. Harita samhita: Hindi vyakhya. 1st edn. Varanasi: Chaukamba Krishnadas Academy. 2005.
- Vidya Lakshmipti Shastri. Yogaratnakara: Hindi commentary. Reprint edn. Chaukamba Prakashana. 2007.
- Concon AA. Tridosha and Three Original Energies. Am J Chin Med. 1980; 8: 391.
- Rizzo-Sierra CV. Ayurvedic genomics, constitutional psychology, and endocrinology: the missing connection. J Altern Complement Med. 2011; 17: 465-468.
- Joshi RR. A biostatistical approach to Ayurveda: quantifying the tridosha. J Altern Complement Med. 2004; 10: 879-889.
- Hankey A. The scientific value of Ayurveda. J Altern Complement Med. 2005; 11: 221-225.
- Hankey A. A test of the systems analysis underlying the scientific theory of Ayurveda Tridosha. J Altern Complement Med. 2005; 11: 385-390.
- Bhushan P, Kalpana J, Arvind C. Classification of Human Population Based on HLA Gene Polymorphism and the Concept of Prakriti in Ayurveda. J Altern Complement Med. 2005; 11: 349-353.
- Patwardhan B, Bodeker G. Ayurvedic genomics: establishing a genetic basis for mind-body typologies. J Altern Complement Med. 2008; 14: 571-576.
- Prasher B, Negi S, Aggarwal S, Mandal AK, Sethi TP, Deshmukh SR, et al. Whole genome expression and biochemical correlates of extreme constitutional types defined in Ayurveda. J Transl Med. 2008; 6: 48.
- Mishra L, Singh BB, Dagenais S. Healthcare and disease management in Ayurveda. Altern Ther Health Med. 2001; 7: 44-50.
- Aggarwal S, Negi S, Jha P, Singh PK, Stobdan T, Pasha MA, et al. EGLN1 involvement in high-altitude adaptation revealed through genetic analysis of extreme constitution types defined in Ayurveda. Proc Natl Acad Sci U S A. 2010; 107: 18961-18966.
- Dube KC, Kumar A, Dube S. Personality types in Ayurveda. Am J Chin Med. 1983; 11: 25-34.
- Dube KC. Nosology and therapy of mental illness in Ayurveda. Comp Med East West. 1979; 6: 209-228.

24. Scharfetter C. Ayurveda. Schweiz Med Wochenschr. 1976; 106: 565-572.
25. Tripathi PK, Patwardhan K, Singh G. The basic cardiovascular responses to postural changes, exercise, and cold pressor test: do they vary in accordance with the dual constitutional types of ayurveda? Evid Based Complement Alternat Med. 2011.
26. Ghodke Y, Joshi K, Patwardhan B. Traditional Medicine to Modern Pharmacogenomics: Ayurveda Prakriti Type and CYP2C19 Gene Polymorphism Associated with the Metabolic Variability. Evid Based Complement Alternat Med. 2011.
27. Kurup RK, Kurup PA. Hypothalamic digoxin, hemispheric chemical dominance, and the tridosha theory. Int J Neurosci. 2003; 113: 657-681.
28. Trawick M. An Ayurvedic theory of cancer. Med Anthropol. 1991; 13: 121-136.
29. Purvya MC, Meena MS. A review on role of prakriti in aging. Ayu. 2011; 32: 20-24.
30. Endo J, Nakamura T. Comparative studies of the tridosha theory in Ayurveda and the theory of the four deranged elements in Buddhist medicine. Kagakushi Kenkyu. 1995; 34: 1-9.
31. Mahdihassan S. A comparative study of Chinese cosmology cum-humorology with eight elements. Am J Chin Med. 1990; 18: 181-184.
32. Suchitra SP, Devika HS, Gangadhar BN, Nagarathna R, Nagendra HR, Kulkarni R. Measuring the tridosha symptoms of unmāda (psychosis): a preliminary study. J Altern Complement Med. 2010; 16: 457-462.
33. Suchitra SP, Jagan A, Nagendra HR. Development and initial standardization of Ayurveda Child Personality Inventory. J Ayurveda Integr Med. 2014; 5: 205-208.
34. Samanta SK, Sehwat A, Kim SH, Hahm ER, Shuai Y, Roy R, et al. Disease Subtype-Independent Biomarkers of Breast Cancer Chemoprevention by the Ayurvedic Medicine Phytochemical Withaferin A. J Natl Cancer Inst. 2016; 109.
35. Majdalawieh AF, Fayyad MW. Recent advances on the anti-cancer properties of Nigella sativa, a widely used food additive. J Ayurveda Integr Med. 2016; 7: 173-180.
36. Marlow MM, Shah SS, Véliz EA, Ivan ME, Graham RM. Treatment of adult and pediatric high-grade gliomas with Withaferin A: antitumor mechanisms and future perspectives. J Nat Med. 2017; 71: 16-26.
37. Qadir MI, Naqvi ST, Muhammad SA. Curcumin: a Polyphenol with Molecular Targets for Cancer Control. Asian Pac J Cancer Prev. 2016; 17: 2735-2739.
38. Ara SA, Mudda JA, Lingappa A, Rao P. Research on curcumin: A meta-analysis of potentially malignant disorders. J Cancer Res Ther. 2016; 12: 175-181.

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