

## Ayurvedic treatment and modern medicine\*

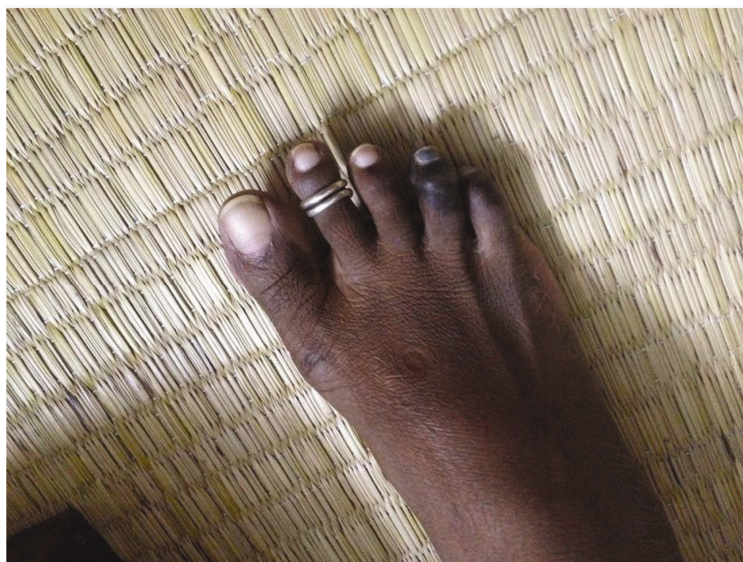
The aim of the meeting on 'Human body as a complex system' was to bring together both scientists (working in physics, chemistry and biology) and doctors, mainly Ayurvedic doctors to discuss two aspects: (a) clinical research and (b) basic research, pertaining to treatments given by Ayurvedic doctors. Another objective of this meeting was to discuss issues relating to Ayurvedic treatments such as drug standardization, treatment procedures vis-à-vis modern medicines. It also aimed at providing a platform for Ayurvedic doctors to present their results from clinical treatments or case studies, especially of those cases where present-day modern medical approaches provide no possibility of treatment or offer limited treatment, or where those treatments are iatrogenic NSAIDs or require surgical intervention such as coronary artery or heart bypass surgery. In other words, this meeting provided a broad platform to discuss various issues relating to Ayurveda, the traditional system of treatment. Scientists, practising ayurvedic doctors, pharmacologists, doctors from NIMHANS, scientists from CCRAS (Department of AYUSH, Ministry of Health and Family Welfare, Government of India) and other allied professionals participated in the meeting. Many felt that this meeting was long overdue since the publication of *Ayurvedic Biology* by the Indian Academy of Sciences, Bengaluru<sup>1</sup>.

The meeting began with inaugural remarks by S. Ramakrishnan (Department of Inorganic and Physical Chemistry, Indian Institute of Science (IISc), Bengaluru). He emphasized the need for mutual interaction and respect between different approaches to gaining knowledge, viz. reductionistic approach of modern science and Ayurveda based on holistic approach. The first talk was by P. Kondaiah (MRDG, IISc), who presented a basic research investigation in which the genomic analysis was carried out for three categories of people, namely

those with vata, kapha and pitta prakritis. The results showed some broad trends, but more work is required to obtain anything definitive. G. G. Gangadharan (IAIM, FRLHT, Bengaluru), presented an introduction to the theoretical foundations of Ayurveda. Rama Jayasundar (Department of NMR, AIIMS, New Delhi) provided a comparative study of the basics as well as operational aspects of Ayurveda with modern medicine and outlined some applications with nuclear magnetic resonance (NMR). P. L. T. Girija (Sanjeevani Ayurveda and Yoga Centre, Chennai) presented several case studies of patients with difficult-to-treat health conditions. A case of hemophilia, a birth defect, and four patients with lupus erythematosus, an autoimmune disorder were shown to have recovered after Ayurvedic treatment (Figure 1). Uday Kumar Ranga (JNCASR, Bengaluru) spoke on the benefits of using a polyherbal formulation for HIV-AIDS. He found that it stabilizes immune activation in HIV-AIDS. G. S. Savithri (Ayurveda Academy, Bengaluru) presented results on multiple blocks in the blood vessels treated by Ayurvedic approach

(Figure 2). In a remarkable result, the non-surgical treatment given by her along the lines indicated in the classical texts of Ayurveda led to the disappearance of the blocks. She emphasized the need for understanding the method of decoding the sutras in the Ayurvedic texts, which could help in delving deeper into the many layers of the meaning of the classical texts.

The afternoon session involved a brief presentation by S. Yashonath (Solid State and Structural Chemistry Unit, IISc) who emphasized the need for concern regarding the patient irrespective of the system of treatment: allopathy or Ayurveda or any other. The Hippocratic Oath states that medical science is an art as well as a science. Discussions on various issues started soon after. N. Nagashayana (Central Government Health Scheme, Bengaluru) suggested that the best from both Ayurvedic and scientific disciplines should be combined to give superior healthcare to the patients. Harish (retired professor, Government College of Pharmacy, Bengaluru) and Nagashayana also stressed the need for proper pharmacological and clinical studies. The limitations



**Figure 1.** Lupus erythematosus, according to modern medicine, is an autoimmune disorder in which the human immune system becomes hyperactive and attacks normal healthy tissues. This was effectively treated using Ayurveda method. The figure shows two of the small toes affected severely and dark or black in colour. These were diagnosed as due to lupus erythematosus by doctors of modern medicine.

\*A report of the meeting on 'Human Body as a Complex System' held at the Solid State and Structural Chemistry Unit, Indian Institute of Science, Bengaluru 560 012 on 12 August 2014.

of modern medical approach, especially iatrogenic deaths, along with limitations of single drug therapy were discussed both during the morning presentation and in the afternoon discussions. It was noted that the modern medical system is slowly moving in the direction of traditional Ayurvedic system by introducing combination drugs and multi-drug therapy sometimes in combination with herbal drugs.

Many felt that the commercialization of medical treatment was at the core of the problem in modern medical system. While research in modern medical drugs by pharmaceutical companies results in introducing new drugs ever so often, the fact is that this is driven largely by commercial considerations such as patent expiry and maximizing profits. Participants expressed concern that the Ayurvedic manufacturers were also not immune to commercial considerations in their manufacture and labelling. It was also noted that some of the Ayurvedic medicines sold by many leading companies are substandard. This led to the discussion on drug standardization in Ayurveda.

It was felt that the existing techniques as well as approaches used in the standardization of allopathic medicines are not suitable for Ayurvedic formulations. However, this does not imply that the Ayurvedic drugs do not need standardization, since as noted above some of the drugs are substandard. Ayurveda has to come up with its own approaches to this problem. It was felt that a separate meeting is required to discuss this. Another solution to this problem could be for doctors to provide medicines prepared by themselves. This will ensure that the doctor is in complete control of the quality of medicines he/she is dispensing. However, only certain medicines can be made in-house, and others require complex processing. Many Ayurvedic doctors are already preparing their own medicines. In addition to quality control, the advantage here is that the medicines can be tailor-made to suit the patient's needs. In fact, this is intrinsic to Ayurveda: strictly speaking, there are no general medicines for all patients with a particular disease (discussed below). In addition, dispensing medicines by the doctor himself/herself has the advantage that the medicines can be freshly made and are therefore more effective. And since it is the patient who bears the large burden of advertising and distribution

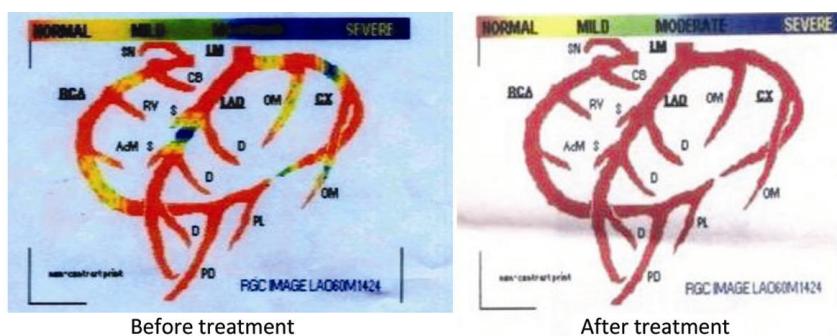
overheads of pharmaceutical companies, clinic-prepared medicines turn out to be cheaper for the patient.

There was discussion regarding the content of Bachelor of Ayurvedic Medicine and Surgery (BAMS) course. This is the equivalent of the MBBS course in modern medicine. K. Upadhyay said that BAMS students also study a large portion of modern medicine. It was felt that this portion needs to be decreased so as to enable the students to gain a deeper and thorough knowledge of Ayurveda itself. A small portion of relevant modern medical concepts can be retained which will help vaidyas interact with allopathists.

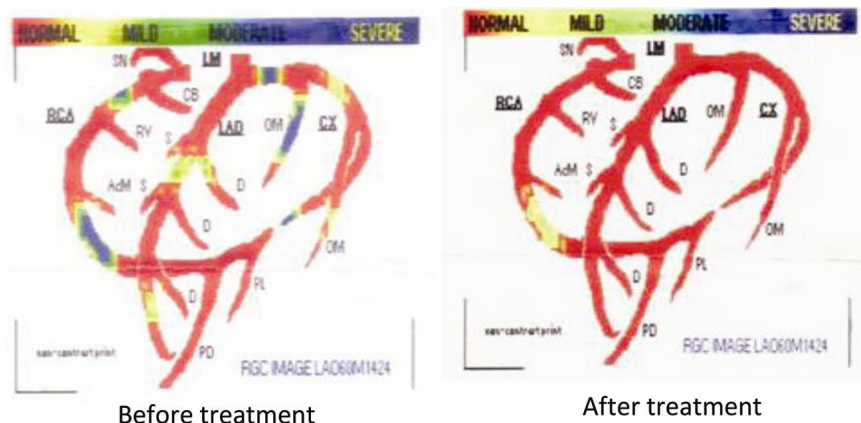
Need for research in Ayurveda was discussed. First, it was felt that clinical research and proper documentation need to be carried out by every practising Ayurvedic doctor. There is a lack of published records for various diseases. It was felt that such publications will help spread awareness on the availability of Ayurveda for treating those particular diseases. Data can be easily collected by recording the patient's condition before and after treatment. In Ayurveda, normally, the treatment helps alleviate not only the particular problem being treated, but it also often leads to general improvement in many other health indicators of the patient. Therefore, it is necessary to use multiple indicators of health even while treating a particular problem. Further, this might necessitate the need to

come up with newer diagnostic tools by Ayurvedic doctors useful for treatments. These new tools are more likely to reflect the overall condition of the complex system that a human body is. Some of the Ayurvedic doctors present at the meeting emphasized that in modern medicine a new disease discovered or uncovered needs new research for discovering treatment for the disease. In contrast, in Ayurveda this is not usually the case: the treatment is not pathogen-specific, but it depends on many factors such as imbalance in the three doshas (vata, pitta and kapha), prakriti (inherent nature of the patient), etc. and hence new research may not be necessary as in the case of modern medicine.

The need for basic research in Ayurveda was discussed. It was felt that while this might not really lead to any immediate benefits to patients, it will help in elucidating mechanisms by which the remarkable results are achieved by Ayurvedic treatments. It will also help bridge the two approaches: modern medicine with its structural perspective rooted in atoms and molecules, and Ayurveda with its functional viewpoint of human system based on vata, kapha and pitta. It was pointed out that the modern science (on which modern medicine is based) essentially originated from a study of inanimate matter, while Ayurveda originated from infinite consciousness manifesting in a finite living being which may be considered as a top-down approach.



**Figure 2.** IHD or ischaemic heart disease is widely known to be the cause of heart attacks. Modern medicine normally requires a bypass surgery for complete treatment of this problem. This has been treated using Ayurveda without the need for any surgery. More than 100 patients have been treated successfully in this way. The figure shows the images obtained from the latest technique called realistic geometric cartographic imaging (RGCI) or cardiovascular cartography (CCG) to detect blocks in the arteries. This technique is non-invasive and painless, unlike angiography<sup>2</sup>. The technique measures speed of blood flow. Whenever the speed of blood is lower, it indicates blocks. The speed of blood is then mapped onto different colours. Here red or yellow indicates normal blood flow, while blue indicates severe blocks. The figure shows the CCG pattern for blood vessels around the heart. (Left) Before treatment there are at least three severe blocks. (Right) The pattern after Ayurvedic treatment. Note that the blocks have completely disappeared.



**Figure 3.** Same as Figure 2, but data of another patient is shown. (Left, before treatment) Note that at least five severe blocks can be seen. (Right) After treatment there are no severe blocks and only one yellow region corresponding to a very small reduction in the speed of blood flow is seen.

Since the modern science originated from a study of inanimate matter, some of its approaches such as single-drug treatments may not really be suited to living systems which are necessarily made up of a large mixture of different types of molecules.

Surgical techniques from Ayurveda are not widespread and it was felt that this needs revival. It was pointed out that, unlike in modern medicine, surgery is the last resort in Ayurveda and therefore it does not play a predominant role. As already mentioned, even complicated conditions such as blocks in arteries can be treated successfully in Ayurveda without surgery (Figure 3).

Yet another point discussed was standardization of the treatment procedure for a given disease or condition in Ayurveda. Here it is relevant to note that unlike in modern medicine, the treatment procedure to be employed is not just a function of the disease, but it is also a function of a patient's prakriti, season and other associated parameters of health. In view of the fact that the exact treatment depends on several factors, it is difficult to enunciate a precise procedure for a given disease unless other factors are mentioned. Since prakriti of a person is not just of three types but can be a complex mixture of the three basic types, it is

a continuous function of three variables. Hence, the resulting treatment procedure becomes a function of more than four variables, three from prakriti and one from the disease.

'Is Ayurveda scientific?' This question was raised and discussed at length. Any scientific investigation starts with some experimental observation which is then explained in terms of underlying understanding, the model or theory. In all this the experimental observation plays a central role. So long as the experiments have been performed properly, the observations are indisputable. What are the experiments in Ayurveda? The human being is the object on which the experiments are performed and the result is whether there is any improvement in the condition of the patient or not. If clinical research can establish (if required, statistically) that the treatment leads to improvement in the condition of the patient and decrease in the disease, then it becomes the experimental observation. As already pointed out, medical science is a combination of art and science<sup>3</sup>. But once the observation is established to be beyond doubt, then it is left to present-day modern science to establish whether it can explain or understand this. It was felt that if science is unable to explain the experimental observation that has

been found to be true, then probably, science needs to expand its present level of understanding. Recall that Galileo was censured when he explained planetary motion based on what he had noticed through the telescope which he had built, thereby endorsing the Copernican theory. Till today, there are no completely satisfactory theories to explain the existence of superconductivity at high temperatures. Science evolves with time and requires time to be able to explain the observed facts.

1. Valiathan, M. S., Towards Ayurvedic biology – a decadal vision document, 2006, Indian Academy of Sciences, Bangalore, 2006.
2. Kumar, R. V., Shirbur, G. N., Augustus, R. J., Lakotsh, J. and Jacobicz, I., In Proceedings of 14th IEEE Symposium on Computer Based Medical Systems, Bethesda, MD, 2001; <http://dx.doi.org/10.1109/CBMS.2001.941695>.
3. <http://guides.library.jhu.edu/c.php?g=202-502&p=1335759>

ACKNOWLEDGEMENT. Partial support from the Department of Science and Technology, New Delhi is gratefully acknowledged.

**P. L. T. Girija**, Sanjeevani Ayurveda and Yoga Centre, Old No. 63, Kamaraj Avenue, 1st Street, Kasturba Nagar, Adyar, Chennai 600 020, India; **G. S. Savithri**, Ayurveda Academy, 229/1, 4th Main 2nd Cross, Chamarajpet, Bengaluru 560 018, India; **Rama Jayasundar**, Department of NMR, All India Institute of Medical Sciences, New Delhi 110 029, India; **G. G. Gangadharan**, Foundation for Revitalisation of Local Health Traditions, No. 74/2, Jarakbande Kaval, Post: Attur, Via Yelahanka, Bengaluru 560 064, India; **N. Nagashayana**, Central Government Health Service, Basavanagudi, Bengaluru 560 004, India and **S. Yashonath\***, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bengaluru 560 012, India.  
\*e-mail: yashonath@gmail.com