Kerala Ayurveda VAIDYAM

A JOURNAL ON EVOLVING AYURVEDA

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Aayurvedaacharya Vaidyan

K G K Panicker

Founder of Kerala Ayurveda Limited

The cover

The cover shows the photograph of an idol of Sage Agastya, a doyen of Ayurveda, from Tiruppangur temple of Tamil Nadu. As per the myth, Agastya was born in a pot, something like a test tube baby. Still he drank the whole ocean! This may be a symbolic statement of his vast knowledge of the oceans. Agastya rasaayana is a well known formulation for cough and is noted for its immuno-modulation properties. Agastya migrated from north to south and taught science, literature and medicine to the Pre-Aryans settled there. S.Indian traditional medicine, Siddha Vaidia, said to have originated from Lord Siva was provided to humanity by Agastya. He has many Tamil books to his credit. Agastya Nighantu, Sabda-samgraha Nighantu and Agastya Samhitaa are among the Sanskrit works of Agastya.



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Contents

1. Editorial 2
2. Welcome 2008 4
3. Presidential Address 5
4. Ayurvedic Vision 7
5. Metabolic Syndrome
   a. Dr. R.V. Jayakumar..... 14
   b. Dr. C.I. Jolly..... 21
   c. Dr. Jacob Jayan..... 25
8. Clinical Synopsis 27
9. Heritage 31
10. Mending the Mind 34

Kerala Ayurveda VAIDYAM

Sparing The Rod And Spoiling The Child

"Spare the rod and spoil the child" is an age old proverb indicating the necessity of corporal punishment of children to groom them properly to responsible adulthood. But today the idea is pretty archaic and is condemned to be uncivilized and brutal. We have societies and rules to prevent cruelty towards children and even the loving parent, not to speak of teachers, is not at liberty to punish children corporally. Even scolding a child is now considered as inflicting mental torture.

"After all, he is my child. I will do whatever I want to do to him. Who are you to question me?" was the usual retort of parents in the past when somebody interfered with the parent torturing his child. Times have changed. No parent is bold enough to take such an aggressive position now. In those days, children were plenty. Now things have changed. Most parents have only one or two wards. Hence the children are fortunate to claim more love and affection from the parents.

In Malayalam there is a saying –"Even for the crow, its child is golden". Today all the parents have turned to be crows with golden children. We love them; we appreciate them and admire them. But we are reluctant to shape them for fear of the society. It doesn't mean that we are not tempted to resort to corporal punishments. But we are inhibiting our urges substituting it with expressions of short abuses or curses or simply with fierce stares. That is good. The child gets the message that the parent is unhappy with him. Moreover attempting corporal punishment is dangerous in an atomic family. There will be no one to intervene and check the extreme arrogance of an angry parent. It was not so in the past. In a large compound family, some one will be there to intervene in the incident, prevent the aggressive parent from proceeding further and to protect the child.

But protecting a child des not mean to leave him unguided to operate as he wishes. That will be a more permanent damage than a blow or two with a rod. Permitting the errors of a child in the pretext of love or affection to the child or fear of society is a serious dereliction of duty from the part of the parent and if the child is spoiled, will be a cause for worry to the parent and society. Just remember all the criminals, terrorists, fanatics and antisocial elements are born to parents.

Man is born free like any other animal. But manhood is something to be learned. We have our instincts. They are more biological than sociological. They have to be trimmed and tuned to suit the sociological requirements. Here is the role of psychology. We say that the way to one's heart is through his stomach. So psychology has a corporal edge. Learning is connected with memory and memory is generated only from stimulations which are strong enough. Reinforcing information with pain was the old technique of conditioning knowledge. Learning to be a human being is not a course without pain. Every society has its schooling system to shape up the children to desirable standards of adulthood. Experts of education are regularly criticizing the older systems of education and trying to reform the education with new approaches. Such experimental innovations in learning and teaching have been always mocked up on by conservatives. Still, reforms are very frequent. They usually change with the rule. Here the politics of learning and imparting knowledge is involved. It is always a pity that adults are dictating norms for education for the children and we have no other way.

Religious or political beliefs or convictions, customs, rites and rituals, language and science and what not are learned by the child from his environment. Home plays an important role in directly or indirectly teaching these. Later, if the child grows into a healthy adult, he develops his skepticism and revalues what he has learned. This revaluation may have positive or negative effect. One may reject what he has learned and correct himself with new ideas. He may also opt to stick on to what he has learned in the childhood. It requires strong will to unlearn what he have learned in early childhood. That is why all missionaries want to catch them young. Young minds are plastic like clay, easy to mould, adult minds are more concrete and is not much amenable to external pressure.

The role models of today's children happen to be mainly unrealistic idols from cartoon serials. There is nothing wrong in it. Always our role models were fictitious characters from legends and epics. There is heroism, adventure, goodness, humanity and bravery in such role models. All the fairy tales teach us morals and naturally lead us to better human values. In such tales, always there is the fight between the right and the wrong and it is very rare that the child will opt to be on the side of the wrong. Still we are now more worried than the past about the values of our children as media cover more evils than good things. We usually wonder "why our youth behaves like this?" But we conveniently forget that the responsibility to shape this youth was ours. Had we properly mended our children, they would not have been spoiled.

There is a general consensus that day by day morality is deteriorating. In Hindu mythology there is a belief that dharma is lost by a quarter in every era. I am not in favor of this idea. Scanning through the mythology we find that treachery, theft, telling lies, jealousy, prostitution, poisoning, murder, arson, genocide etc. were not rare in the past eras. Considering also the present explosion in population, perhaps they were more in the past. Draupati was pulled to the court of Delhi and in front of many respected personalities an attempt to denude her was done. None reacted against the attempt. I cannot even imagine that such an incident will happen in the Indian parliament today. Today we have higher morals.

In a patriarchal society, parents are usually role models to the children. But at present, our society is not that patriarchal. Children do not worship their parents. They are just friends, mostly friends in need. The influence of parent on child is minimized by other influences like those from the media, friends, schools, books, leaders etc. A good parent should guide his child to choose among these influences without dictating what is good and what is bad. Dictating norms naturally breed contempt in the child as the child want to exercise his choice.

We usually think that children have no logic. It is wrong. Human beings are logical by nature. But the methodology of arriving at logical conclusions might go wrong in a child due to personal preferences and lack of proportion. It is the duty of the parent to present things in a logical fashion to the child so that the child can arrive at correct decisions.

I feel that the present parent is suffering from conflict of values. He has learned many morals. But he is unable to practice them mainly because of ambitions and greed. Greed is the root cause of all evils. Because of greed the parent is unable to be a moral role model to his child and loses even his moral right to mend the child when the child goes wrong. The child may retort that "you did the same thing papa". This is the conflict of parental preaching and practicing.

We find often that criminals are born to virtuous parents. Son of a clean honorable judge may grow up to an underworld boss. A good teacher who advocates always for morals may have a pickpocket or burglar for a son. Why this is happening? His son may not be taking lessons from him. There may be negative influences flowing to the child from others in the family and his society. Psychologically the child may be revolting against the father. There is

(contd. on page 30)

Kerala Ayurveda VAIDYAM

Welcome Address 2008

Dr. K. Anilkumar*



In every civilization and culture, there is the practice of remembering the parent, once in a year, with reverence and gratitude. The day is considered as auspicious and in many communities, it is a religious ceremony. The day brings in the memory of what the great soul has contributed to the living generation for its well being. In the case of a company, which is a legal entitty, its founder who has given birth to it is its parent. Hence, companies remember the founder with respect on the founder's day.

Vaidyan KGK Panicker, the founder of Kerala Ayurveda Limited, is my father too. Thus to me, this day, the founder's day of Kerala Ayurveda Limited happens to be very important. It provides me heart felt warmth to welcome you all who have assembled here today to participate in the founder's day celebrations of Kerala Ayurveda. The day is not intended to aggrieve by sharing our common loss of a great soul. This is the day for rededicating ourselves in the righteous path shown to us by the founder. This is not a religious rite. But it is very close to it. We have designed the founder's day to be an auspicious ceremony of honoring our science. In Kerala Ayurveda our religion is science, the science of life i.e., Ayurveda. Hence the founder's day is an activity to propagate the science of Ayurveda.

Kerala Ayurveda is a research oriented company. Our research focus is mainly on clinical medicine and new drug development. Research is vital for the development of the science. We are now receiving various reports on research done on ayurvedic ideas and materials from all over the globe. Many of them provide us evidences for ratification of ayurvedic theories and practices. Recently there was a flooding of results of works on triphala. Amazing is that the majority of such works were not done in India. Recent valid works on the effect of Brahmi on age associated memory, anxiety, depression and cognitive performance also are from foreign countries like Portland and Australia. There is a study on the genetic basis of the humoral constitution from the Institute of Genomics and Integrative Biology, New Delhi. The study, based on blood chemistry and gene pattern, proves beyond doubt that the concept of Dosha Prakriti in Ayurveda is very scientific and has a real role in determining the susceptibility of individuals for particular diseases and variation of response of people to different medicines. It is even considered as the beginning of 'Ayurgenomics'. It is interesting to note that the proposal for the study was first rejected seven years ago by biotechnologists who were skeptical of genome studies in Ayurveda. Some ayurvedic doctors had assisted the study but the study was not primarily done by ayurvedic people. The whole picture reflects that present day valid research on ayurvedic topics and materials are done not by ayurvedic people and most of the work is done outside India. Even the New Delhi study on genomics was assisted by a Russian Institution. We have to welcome such work by others. But we the ayurvedic community should come forward and lead such studies. If not, the ayurvedic perspective of these research works will be soon lost. Hence Kerala Ayurveda always utilizes the opportunities to encourage ayurvedic research and the awards are part of this.

All the awards given out today are to appreciate the good work directed towards the betterment of Ayurveda. The intellectual conclave conducted today is designed to keep the Ayurvedic community

(contd. on page 33)

**Executive Director, Kerala Ayurveda Limited*

VAIDYAM

Presidential Address

On the occasion of the inaugural ceremony of Founder's Day 2008

Mr. Ramesh Vangal*



Whenever I think of Vaidyan KGK Panicker, the founder of this organization a quotation comes to my mind ***"asato maa sad gamaya, tamaso maa jyotirgamaya, mrtyormaa amrtam gamaya, Om Shanti, Shanti,Shanti"*** meaning, lead me from nonexistence to existence, from ignorance to light and from mortality to immortality. May peace be upon us. Many of you will be surprised because I am coming from a western multinational background. I spent most of my life operating businesses, I have traveled in ninety odd countries and I speak many languages. But in a sense, it was a discovery of myself as I have gone into Ayurveda. I speak this from my heart. I never had an experience like what I had in the recent two years, especially in the last six months. I have visited fifty or sixty temples and I have gone into a complete understanding of this as a part of a heritage of medicine. And indeed Kerala, to me, is a very special place. Because your places of worship, whatever be your religion, are full of devotion. The people have sraddhaa and it is connected with me with a very basic level. And if I think about it, my movement into Ayurveda, my earlier experience was doing a lot of things. I sold baby diapers, toothpastes and shampoos for Proctor & Gamble. I sold Pepsicola, snack foods and blackened carbonated bottled water –cola at a very high price. I got into liquor business and from there moved into IT - wide and different businesses. But coming into Ayurveda connects with me, because for the first time I believe that I am doing something valuable and I believe it is a global reality.

You look at two places. When I went to Tibet and spent a great deal of time there, I found that there is a parallel with Tibet and Kerala. Both have been remote areas distant from the rest of the world. The average height of Tibet is 11,000 ft. If you consider the highest mountain in Europe, Mount Blank, is 14,000 ft., you will understand how remote and difficult Tibet is to access. The medicine of Tibet went there with the movement of Buddhism that has gone into China, came to Tibet and stayed there. That particular traditional Chinese medicine, well recognized in the west with the acupuncture and so on, has its roots in Ayurveda. The same Ayurveda went to Kerala and it was protected by what Parasuraama created – the mountains, midland and seashore. This particular narrow strip of land has been heaven because it was never been conquered and never had much invasions. The beauty of this place is its secularism because you have all the three major religions here. Within this you have the heritage when you use Ayurveda.

In a way this is god's own country and the medicine here is God's medicine. Let us go forward with God's own vision trying to take Ayurveda to the rest of the world. In this heritage is Susruta. If you talked to me about Susruta I would not have understood anything. But today Susruta means something to me. When I watch you, the doctors of Kerala, I began to think that this is something special.

I think there are a whole lot of challenges in terms of exercising the execution of this heritage. Firstly,

* Chairman, Kerala Ayurveda Limited

western science, western medicine, is a challenge. Unfortunately science is such that a specialist gets to know more and more about less and less. He knows absolutely everything about almost nothing. That is specialization carried through. Today you can go to a western doctor and what he does? Average time spent by a patient in the United States with the doctor is seven minutes. That is the fundamental problem. They will basically get your MRI, Blood tests, endoscopy and all such things. Lots of dollars! Lots of money! Lots of Rupees! So in a sense, you basically lose what is medicine and healing is about, because medicine and healing starts with the spirit and then the mind. When I look at it, the challenges from western medicine to our science cannot be underestimated. This whole question of heavy metal, I am sure there are many instances where heavy metals have come inside beyond permissible limits and have created problems because we don't have enough standardization. We need to do that. But on the other hand when doctor says or writes about this creating a story in America, I want to ask a simple question. Who wrote about Biox? What about all the western medicine, those are ravaged bodies for centuries, that have carried side effects which people don't know what? They are almost moving examples of medication that handle symptoms and not the cause. So if I look at it that is one challenge that we have to overcome. The way we overcome that is the research and credibility. We want to establish the credibility of the basics. We have to prove to the rest of the world.

The second thing is purity. Environmental encroachment of forests means the basic ingredients are not pure as they could be. As a consequence we have to worry about ingredient purity. We in Kerala Ayurveda, are working very very extensively as we go forward in trying to tackle the scenario. In fact, it is my ultimate desire to buy a plantation, may not be as part of Kerala Ayurveda but be able to create the environmental purity.

Thirdly it is marketing and public relations. The only thing I can say to you is that I understand a little bit of that because I was responsible for bringing the Pepsi into the country including all the ads, the commercials and captions such as "Yahee he the right choice baby" , "There is nothing official about it". This is something that we have as basis. In the last two and a half years I have been involved in Kerala Ayurveda. We have now got a US presence, five clinics doing well. We have four academies in the US, mostly on the west coast, but also in other areas, particularly in New York and Miami. In addition we have got to revamp. You see the branding is completely different. We are delighted that we actually have the name Kerala associated with our brand name because we would like to be your representative in terms of Kerala and Ayurveda.

We think we have a message, a future and a progress. We put in a lot of money into building the basic infrastructure because with this infrastructure we are poised to explore. It will happen with some time and it takes a lot of money because these are not business or things which you can expect to happen overnight as it is a comprehensive change. I think it is my duty to be able to deliver this and I am delighted to be in Kerala for today.

Finally I want to finish with one simple statement – one exiting statement that I would like to give to all the young people here. I am fifty four and I am telling you one thing I have believed in – this particular line which I saw in Disney land, United States. It said "Countrymen, you can do it. Go ahead and dream. If you can dream it, you can do it." Go ahead and dream because that is the basis of life.

"Go ahead and Dream.
If you can dream it,
you can do it"

Kerala Ayurveda VAIDYAM A JOURNAL ON EVOLVING AYURVEDA



Ayurvedic Vision For Chronic Metabolic Disorders – A Global Challenge

Dr. Ashok D.B.Vaidya, MD Ph.D*

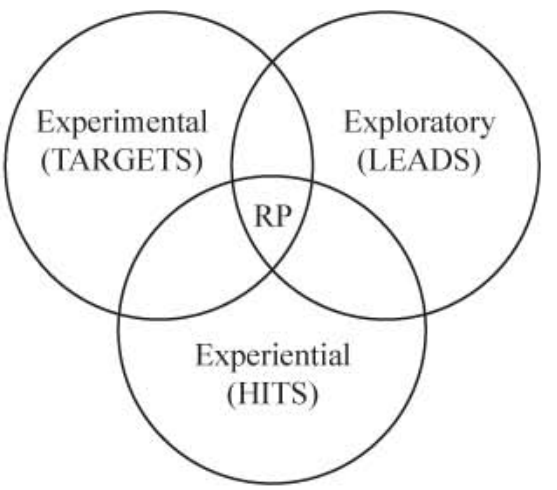
Kerala is the land of Bhrgu and Bhargava and that the cult is considered as the best in Bhagavad Geeta. In Kerala the family tradition of Ayurveda has flourished. Vaidyan K.G.K. Panicker has attained profound knowledge of Sankrit, a pre-requisite for understanding Ayurveda, at an early age from Dr. P. R. Sastri. He had his apprenticeship with Vaidyan A.R. Rama Vaidyar (Aluva). He established his own vaidyasala in the year 1945 at Aluva, a central bridge between Northern and Southern Kerala. Thus a new philosophy in Health care was born on the banks of Periyar. He was committed to deliver the richness of Ayurveda through quality products and services. He also visualized the global reach of Ayurveda in services and research. I admire the corporately managed Kerala Ayurveda Ltd. for its noble task of propagating Ayurveda.

Ayurveda is a synthesis and hence ayurvedic study never ends. Lokmanya Bal gangadhar Tilak said - "The Science of Life (*Ayurvidya*) can never attain finality. Therefore humility and relentless industry should characterize their endeavor and approach to knowledge. The entire world consists of teachers for the wise and the enemies for the fools."

Susruta stated that Ayurveda is a fathomless ocean - " The science of health is fathomless like the ocean and it cannot be exhaustively stated even in millions of couplets". Sir Isaac Newton said - "If I have been able to see further than others, it is because I have stood on the shoulders of giants." We in Ayurveda are standing today on the shoulders of the giants who provided us their treatises.

The Chitrakoot declaration formulated the Golden Triangle of Ayurveda. The triangle consists of three sides, Dravya-guna-vijnaan from Ayurveda, Reverse pharmacology from Modern medicine and Systems biology from Basic sciences. This was adopted by the Planning Commission and funds were already allotted for 18 scientific studies.

The universe of reverse pharmacology consists of Experimental targets, Exploratory leads and Experiential hits.



CHRONIC METABOLIC DISORDERS

- Inbornerrorsofmetabolism:Phenylketonuria, lipidoses etc.

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• Intrauterine factors: Folate/vitamin B12, IUGR, drugs ,toxins..

• Early life influences of diet, exercise, stress, environment …

• Pubertal spurt and multi-endocrine disruptors of IR & obesity

• Adult life-styles & proclivity to IR, diabesity & hypertension

• Hyper-lipidemias, atherosclerosis, CHD and vascular events

• Aging and related disorders : Alzheimer's disease, arthritis..

• Iatrogenic and immunity-related metabolic dysfunctions

• Chronic metal/pesticides/myco-toxins exposures

This list is not complete and chronic metabolic disorders are different from the metabolic syndrome.

Diabetes - The Curse Returns To India

12 % of adult population

25 million diabetic patients

35 million by 2010 A.D.

2.4% in rural area

5.9% in urbanizing towns

11.6% in urban cities

16.6% in Mumbai & Kolkota

India is the capital of diabetes.

Reasons for the Epidemic

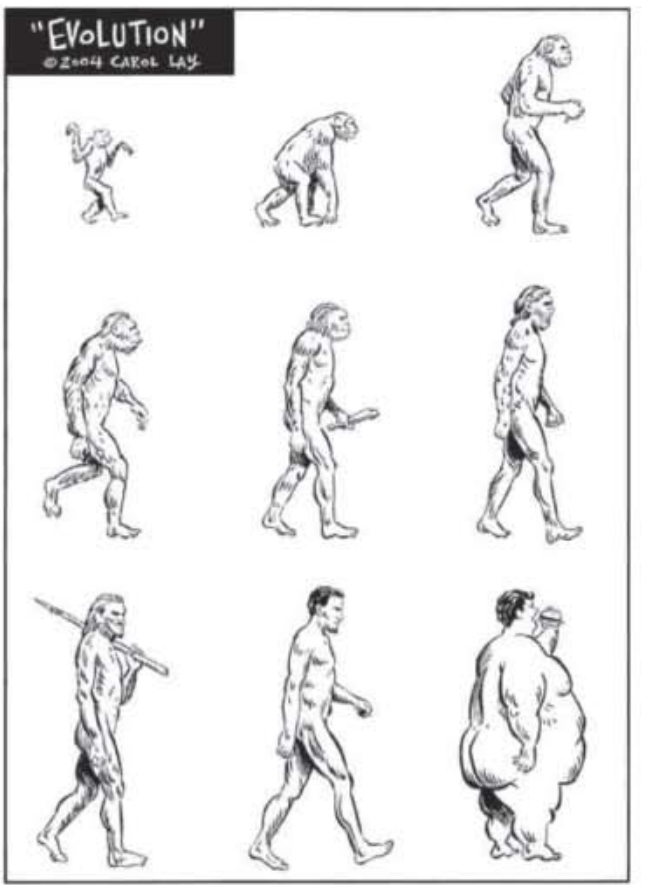
Change of diet over the past 6 decades

Most Indians were lacto-vegetarians

Intake of processed & preserved food

High density and deep fried foods

Sedentary life and urban stress



The Price of Evolution - Globesity Epidemic

63% of the health expense is for diabetes, 14% is for coronary heart disease and 6% is for hypertension. Put together it is 83% of the total expense.

Metabolic Syndrome – the iceberg concept

Type 2 diabetes, dislipdemia, hypertension and obesity form only the tip of the iceberg. Any three of them occurring together is metabolic syndrome. At the bottom are the environment factors, genetic factor and lifestyle. They affect glycemia, HDL-C, triglycerides, blood pressure, waist circumference etc and generate the metabolic syndrome.

Insulin Resistance

Central obesity and reduction in physical activity causes hyperinsulinemia which in turn causes insulin resistance. Hyperinsulinemia and insulin resistance together are conducive to increase

of fibrinogen, proinsulin, PAI-1, CRP, IGT PPG, TG, small dense LDL and microalbuminuria and to reduction of HDL.

Natural History of Type 2 Diabetes

Twenty years of obesity and ten years of impaired glucose tolerance can lead to diabetes. As time passes, uncontrolled hyperglycemia will occur as represented by the increase of both fasting and post-meal plasma glucose levels. In insulin resistance, the insulin level in plasma will be high. If there is no insulin resistance, insulin level will go down well below the normal due to defective beta cell function.

Diabetes Mellitus in Ayurveda

"Excessive sweating, body odour, body looseness, desire for soft chairs/beds and sedentary pleasure and sleep, deposits in heart, tongue, ears, increased bodyweight, excessive growth of nails and hair, fondness for cold items, thirst and dryness of throat, sweetness in mouth, burning of hands and feet and ants gathering around urine are manifestations of *Meha*".

Correlative Validity

Ayurveda	Diabetology
• *Tridosha* esp. *kapha*	• Multisystem & Glucose + H2O
• *Dravatva* & *Agnimaandya*	• Flows & Dys-orexia
• *Dhaatvagni-maandya*	• Metabolic dysregulation
• *Vr̲ddha-Apaachit Dhaatu*	• Adipose, blood, liver, muscle, DNA
• *S̲ithila-angataa*	• Sarcopenia, loose fat
• *Ghana-angataa*	• Increased B.M.I.
• *Hr̲nnetropadeha*	• Heart & Eyes deposits
• *Trshn̲aa-Bahumootrataa*	• Polydypsia & Polyuria
• *Kara-paada-daaha*	• Burning of hands and feet

Correlative Opportunities

Ayurveda	Modern medicine
• *Sveda, angagandhah*	• Hyperhidrosis & Odour
• *Jihvaa-S̲ravanopadeha*	• Cerumen & Tongue-coating
• *Ke̲sa-nakha-ati-vr̲ddhih*	• Excessive Hair-nail growth
• *S̲eeta-priyatva*	• Preference for cold items
• *Maadhuryam-aasye*	• Sweet taste in mouth
• *Jvara-Aama*	• Biofilms in D.M.
• *Danta-veshṯana*	• Periodontitis

Diabetes Mellitus – *Shaṯ -kriyaa-kaala*

Sancaya	Accumulation	Nutritional Biochemistry
Prakopa	Aggravation	Immunology
Prasara	Spread	ADMBE
Sthaana-sansraya	Localization	Metabolomics
Vyakti	Manifestation	Clinical Signs
Bheda	Complications	Pathology

Oxidative Stress & Advanced Glycation End Products

New Targets: *Shaṭ-Kriyaa-Kaala*

At the stage of accumulation cellular accumulation of lipids occurs. This results in cellular dysfunction and formation of adipokines in the stage of aggravation. At the stage of spread circulatory distribution of triglycerides and free fatty acids occur. During localization they localize in the beta cells resulting in the next stage i.e. manifestation of diabetes mellitus. In the last stage complications of DM occur.

Energy dysregulation causes oxidant damage and early metabolic insult. Oxidant damage later results in insulin resistance at the level of spread and lead to manifestation of the disease and complications. With this pathological insight of the six phases of intervention, prevention and management can be planned. During the circulation and localization levels antioxidants, anti inflammatory drugs and insulin sensitizers can be employed. Antihyperglycemic and hypolipidemic drugs can be given at the phase of manifestations. Measures to prevent complications are also to be initiated at this phase.

Moving Target

- Insulin resistance → Chronic inflammation
- Pancreatic insufficiency → CNS Role
- Liver/Muscle focus → Adipose system
- Multisystem & multilevel energy homeostasis

Variable	Urban		Rural
	Middle class (n=40)	Slum dwellers (n= 28)	(N=43)
IL-6 ($pg.ml^{-1}$)	7.15***	23.5***	2.50
TNF-∞($pg.ml^{-1}$)	30.9***	39.3***	2.57
Leptin ($ng.ml^{-1}$)	6.3***	9.6***	1.9
Diabetes	7.9%	11.8%	0.2%
IGT	15.9%	16.6%	3%

Median *p<0.05, ** p<0.10, *** p<0.001

Scope for Intervention

Intervention should be done at the pre-diabetic stage or the earlier stage using lifestyle measures *(aahaar-vihaar)* and medicines. .

Research targets in Diabetes

Activity	Disciplines
Antioxidant	Free Radicals
F.R.Scavengers	Physiology/Chemistry
Anti-inflammatory	Cytokines Chemistry, Immunology
Insulin Signal	Molecular Endocrinology
β-islet cells	Cell Biology Stem Cell Biology
Lipid deposits	Lipid Pharmacology/Biochemistry
Endothelium	NO/Endothelin Physiology
Adipocytes	Energy Dynamics Adipokines
Life Styles	Exercise, Physiology,*pathya-vidyaa*

Adipokines Central to Diabetes Mellitus

Cytokines: TNF-∞, IL-6,Il-8,IL-10,MCP-1

Hormones : Leptin, resistin, adiponectin, angiotensiogen

Complementary factors :

Adipsin, complement factor B, ASP

Prostacyclins: PGE2

Growth factors: VEGF, HGF

Enzymes: Cytochrome P450 aromatase, 17bHSD, 11bHSD1, PAI-1, LPL, CETP, ACE

Effects of Sympathetic Activation to Promote Insulin Resistance in Obesity

Increase in sympathetic nervous system activity results in increase of lypolysis, decrease of muscle blood flow and leptin along with other direct effects. All these will cause insulin resistance. Drugs like *guggulu*, *kuṭakee* and *hareetakee* cause NE depletion and control the increase of sympathetic nervous system activity. Drugs like *sarpagandha (R. serpentina)*, *kapitha (Limonia acidissima* Linn.), *triphala* (the three myrobalans) and *nimba* (*Azaridachta indica* A.Juss.) are useful here.

DM-FN-01: Antidiabetic

Spectrum of activities in in vivo and in vitro models

Antioxidant: Free radical damage of macromolecules and cells

Insulin sensitization: Adipocytes and skeletal muscle cell lines

AntiAGEs: Decrease Fructosamine and Carbonyl formation

Platelet Function: Prevent aggregation

Insulin Sensitization: Fructose fed IR and Dyslipidemia in rat models

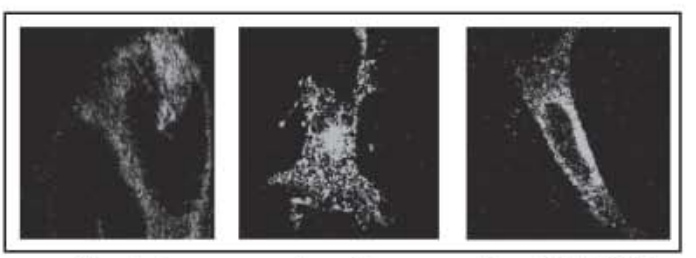
Anticataract: Galactose/STZ induced cataract model (rat)

Angiogenesis: Increased in CAM model (in ovo)

P- AKT in 3T3L1 adipocyte: Effect of DM-002 and DM-001

P-AKT was increased with DM-002 compared to insulin. There was further increase when insulin was supplemented with DM-1 or DM-1 and DM-2. If normal insulin level can be considered as 100, in reduced insulin level of 20, the combinations effected a raise of insulin level above 150.

GLUT-4 translocation: Effect of DM-002



Control Insulin Ins+DM-002

It is established that DM-002 has effect in the gene level and that it promote synthesis of antioxidants.

Dm-Fn-02: Antidiabetic Activity

Spectrum of activities in in- vivo and in- vitro models

Antioxidant: Free radical damage of macromolecules and cells

Insulin sensitization : Adipocytes and skeletal muscle cell lines

AntiAGEs: No Effect on Fructosamine and Carbonyl formation

Platelet Function: Prevent aggregation

Insulin Sensitization: Fructose fed IR and Dyslipidemia in rat models

Anticataract: Galactose/STZ induced cataract model (rat)

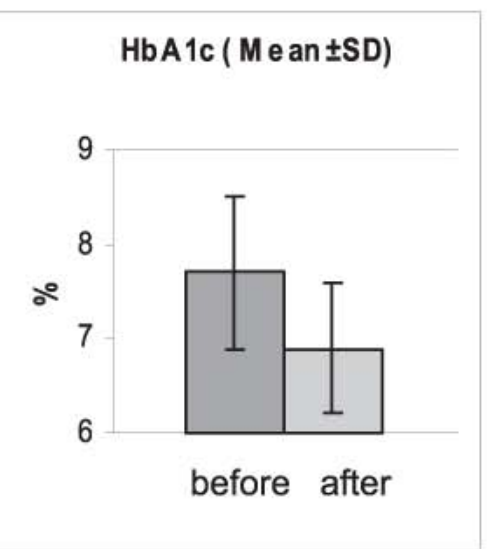
Angiogenesis: Increased in CAM model (in ovo)

DM-FN-02 was tried in STZ-induced Type II DM. It was observed that the drug reduced blood sugar level considerably. The drug was administered in doses of 500, 1000 and 5000 mg/kg of body weight and in all cases substantial decrease in blood sugar level from 340 -390 mg/dl to 300mg/dl and below was noticed in 300 minutes.

TYPE 2 NIDDM with Emphasis on Insulin sensitisation

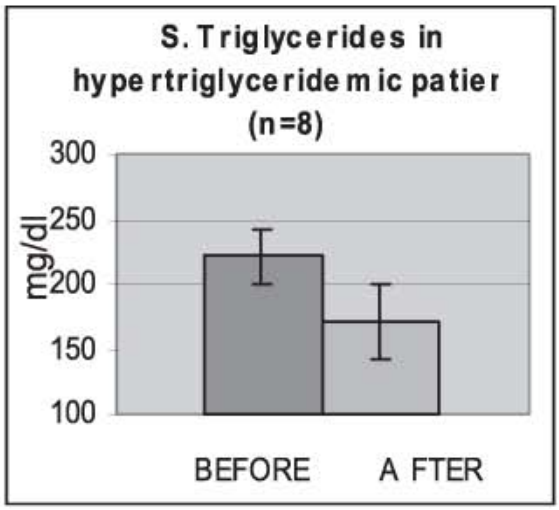
a) DMFN-02-Glycemic Control: HbA1C

A study on 26 cases of NIDDM before and after meals shows that HbA1C levels decrease considerably after meals except in one case. The reduction was > 0.5% in 15 out of 26 cases.



7.7 ± 0.8 to 6.9 ± 0.7

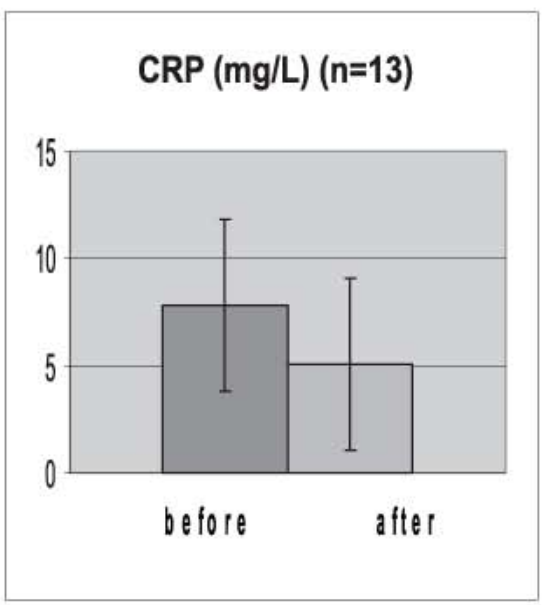
b) DMFN-02- Lipemic control: TG



High TG/low HDL-C commonly observed in Insulin resistant states - *Clin Chem Acta Feb 2006*

Fasting & PP hypertriglyceridemia has consequences for atherogenic risk in diabetes *Diabetologia Mar 2006*

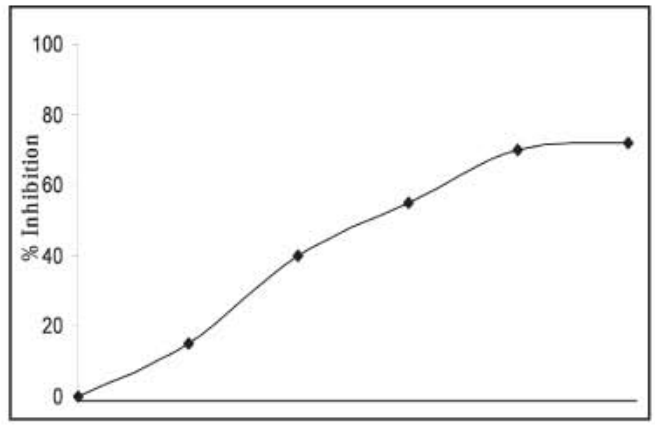
c) Anti-inflammatory Activity hsCRP (n=26)



7.8± 4 to 5.1± 4 (p= 0.05)

hsCRP, a proinflammatory marker predicts the development of type 2 DM & associated CVD - Curr Mol Med 2005;5:309-22

AR Inhibitory activity of DM004 Aqueous extract n = 3



10	25	50	75	100
0	1.000	1.397	1.698	1.875	2.000

Log Dose (ug/ml)

Inhibitors of Aldose reductase?

It is reasonably inferred that Isovitexin, Mangiferin and Apigenin are inhibitors of Aldose reductase .

DM-FN 02: NDA status
DNA DAMAGE

Increased frequency of sister chromatid exchanges in patients with Type II diabetes.

Frenny J. Sheth, Pinaki Patel, Ashok D.B. Vaidya, Rama Vaidya and Jayesh Sheth

- Curr. Sci., 2006;90(2):236-39

DM-FN 02 & DNA Protection
Increase in size of food & beverage servings

- 1950s – 5 to 6 ounce
- 1960s – 12 ounces
- 1990s – 20 ounces

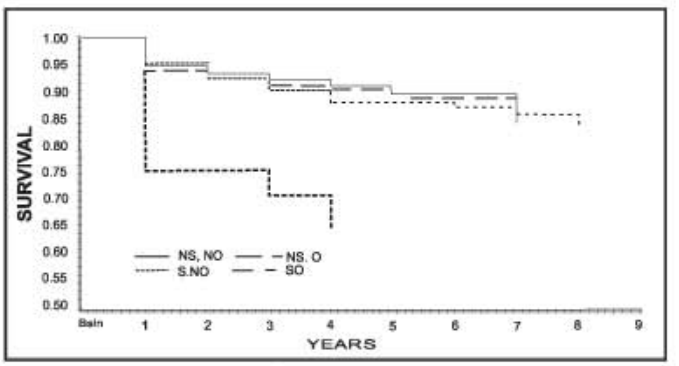
Globesity Epidemic

There is alarming rise in the incidence of obesity from 1999-2000 to 2003 –'04. Obesity is more prevalent in females. Indian perspective of

the epidemic has two faces - one is over nutrition and the other under nutrition

Sarcopenic Obesity:
The Confluence Of Two Epidemics

NS, NO: nonsarcopenic, nonobese; S, NO: sarcopenic, nonobese; NS, O: nonsarcopenic, obese; S, O: sarcopenic, obese.



Baumgartner RN, Obes Res 2004; 12: 1995

Sarcopenic Obesity and Inflammation (Inchianti Study N =378 Men and 493 Women)

	Central obesity		p value	Global obesity		p value	Low strength		p value
	Yes	No		Yes	No		Yes	No	
CHD %	6.00	4.93	0.52	6.42	4.90	0.39	7.22	4.31	0.066
Stroke %	8.83	5.44	0.062	7.79	6.13	0.40	9.28	5.17	0.024
DM %	19.44	8.84	<0.001	17.44	10.56	0.01	14.08	11.38	0.27

Schrager M, J Appl Physiol 2007; 102: 919–925

***Withania somnifera*: Ayurvedic & Experimental Properties**

According to Bhaava-Prakaasa *Asvagandha* (*Withania somnifera*) mitigates vaata and kapha cures vitiligo, edema and consumption is strengthening, rejuvenative and very much aphrodisiac. It is bitter and astringent and hot in potency.

- *Balya* and *Brmhaneeya* – gives strength and decreases fatigue
- It acts as an anti-stress agent and nervine tonic, specially used for insomnia
- *Vaata-hara* – used to treat vaginal pain in older women
- Improvement of cognition
- Improvement of bone calcification
- Antioxidant and hypocholesteremic effect
- Immunomodulatory & antiinflammatory
- Anti-cancer
- Rejuvenating effect

***Withania somnifera* in Menopausal Women – Change in QOL**

A study of *Withania somnifera* (*asvagandha*) on 18 menopausal women revealed that in all of them, except one, the BL score reduced considerably by three months.

Conclusion

Though Ayurvedic medicines are a bit slow in action, the world may wait a bit as it is the tortoise that wins the race. As Khalil Gibran has told in 'Prophet' as follows:

And a merchant said, Speak to us of

Buying and selling

And he answered and said:

To you the earth yields her fruit and you shall not want if you but know how to fill your hands.

It is in exchanging the gifts of the earth that you shall find abundance and he satisfied.

Kerala Ayurveda VAIDYAM A JOURNAL ON HEALING AYURVEDA

Metabolic Syndrome

Dr R.V. Jayakumar MD, DM, MNAMS, FRCP*



Introduction

Diabetes mellitus and Ischemic Heart Disease are the two present day Epidemics. If you can prevent this twin epidemic, then we can claimed to have conquered the major health problem in the Universe.

Definition

Metabolic syndrome refers to clustering of cardiovascular risk factors, whose underlying pathophysiology is thought to be related to Insulin resistance. Even though many people in late 1980s were talking about this clustering , it was Reaven's Banting memorial lecture (1988) which gave the syndrome its hold in medical literature.

Clinical features

Metabolic syndrome (Syndrome X) is characterized by central obesity, high blood pressure, high triglycerides, low HDL cholesterol and insulin resistance.

Metabolic syndrome has taken an all important position in medical literature.

By Medline search in early 2005, there were 4726 citations with 4013 studies performed in human subjects.

2005 Sept -- Diabetes Care ADA & EASD - Too much of a critical information is missing to warrant its designation as a "syndrome".

Criteria for metabolic syndrome

NCEP ATP-III

(Any 3)

- FBS >110 mg %
- Systolic BP > 130
- Diastolic BP > 85
- HDL: <40 M/<50 F
- Triglyceride > 150
- Waist: >40"M/>35"F

Is it easy to make a diagnosis with the ATP III? Is it an overestimation?

WHO Criteria

- HDL <35 M/<40 F
- Triglyceride > 150
- Systolic BP > 140
- Diastolic BP > 90
- Urine AER >20 ug/min
- WHR: >0.90 M, >0.85 F.

In WHO criteria glucose abnormality is a must. Are these criteria biased towards diabetes?

We find that the definition of the syndrome differ in the criteria listed. Microalbuminuria is listed in WHO criteria and not in the ATP III. Elevated FBS is enough in ATP III, but Insulin resistance measure is a feature of WHO criteria. Some of the criteria used for defining are ambiguous – e.g., BP definition is systolic and diastolic or either?

The rationale for the criteria for selection was that the syndrome components are associated with insulin resistance. There is considerable doubt whether all patients with metabolic syndrome are really insulin resistant. Mc Laughlin et al. Found that 78% of those

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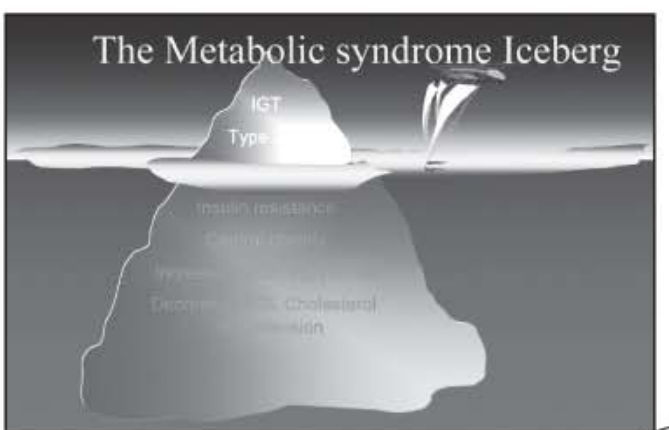
with metabolic syndrome are insulin resistant, but only 48% of those with insulin resistance had metabolic syndrome. Most investigators use the term "insulin resistance" to describe the metabolic syndrome, though hyperinsulinemia or insulin resistance may not be present in the subjects.

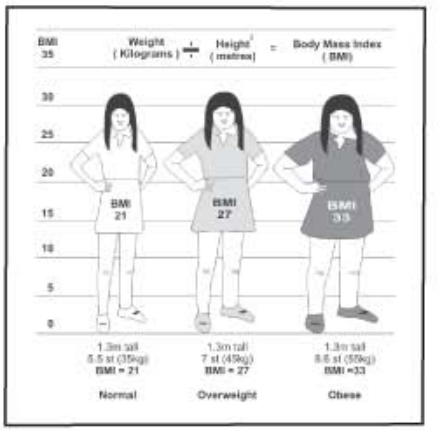
What is central obesity?





Metabolic syndrome is an iceberg. IGT and type 2 DM are at the tip of the iceberg. Insulin resistance, central obesity, increased VLDL triglyceride, decreased HDL cholesterol, and hypertension are at the bottom.



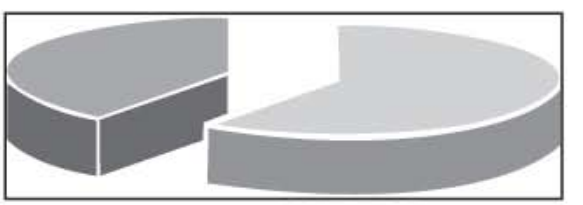


The scheme of metabolic syndrome

Physical inactivity is conducive to abdominal visceral fat (AVF) which causes insulin resistance. Physical inactivity also directly causes insulin resistance. High-fat high calorie diet is also conducive to AVF and insulin resistance. Ageing is yet another factor causing AVF. Both AVF and insulin resistance contribute to metabolic syndrome. Metabolic syndrome produces dislipidemia, hypertension, hyperinsulinemia, low grade inflammation, impaired hemostasis and endothelial dysfunction.

Genesis of Metabolic syndrome

Neuroendocrine as well as unknown genetic factors and environmental factors affecting energy intake and expenditure play important roles in the genesis of metabolic syndrome. Of them the major role is of the environmental factors. Genetic changes take years to manifest.



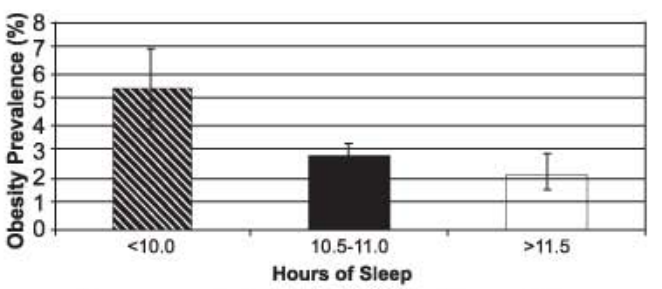
The metabolic syndrome is a complex clustering of risk factors associated with physical inactivity; high-fat, high-calorie diets; abdominal adiposity; and aging.

Eating habits

Portion sizes have increased during the last 30 years. Drinking of water has come down with more of sweetened beverages. More beverages consumed with short, wide glass than thin and tall ones. Energy density of food increased (by dehydration and adding fat), useful for storage and transportation. Eating outside the home has increased during the last 30 years. More fast food restaurants are there than Churches in USA. Breast feeding for more than 6 months significantly reduces the risk of obesity later on. Night eating – those who consume more than 50% of their total calories after sunset is associated with obesity. Eating fewer meals (three or less) would be associated with obesity than eating many (six or more) meals. Eating breakfast is associated with lower body weight. Eating breakfast cereal has been associated with low BMI in girls.

Effect of sleep

Shortness of sleep time is related to obesity. Children who slept for less than 10 hrs had 5.4% obesity compared to 2.8% in those slept for more than 11 hrs. Lowering of sleep time is associated with glucose intolerance and increasing Insulin resistance. Lowering of sleep time is associated with low Leptin and high Ghrelin levels.



Dose-response between the amount of sleep and the weight changes. (Drawn from von Kries et al.,2)

Treatment

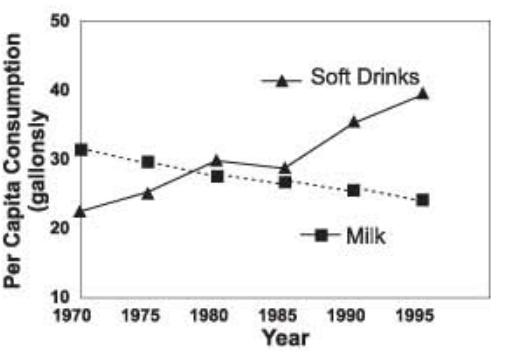
There is no Genies in the treatment of metabolic syndrome.

Increased visceral adipose tissue means deteriorated lipid profile, impaired insulin sensitivity (insulinaemia & glycaemia), susceptibility to thrombosis,. Impairment of inflammation markers and impaired endothelial function. When 5 to 10% weight loss is achieved through diet, physical exercises and pharmacotherapy, there will be a 30% reduction in visceral adipose tissue. This is due to the shift of fat from visceral adipose tissue to subcutaneous adipose tissue. This will improve the lipid profile, insulin sensitivity, reduce susceptibility to thrombosis, reduction in the impairment of inflammation markers and improve the endothelial function. The risk of coronary heart disease is high with increased visceral adipose tissue (high waist measurement) and low with subcutaneous adipose tissue (low waist measurement).

Weight management fails if the weight goes on increasing. It is again a failure if lost weight is regained after some time. Hence to claim that a weight management program is successful we should achieve weight loss and maintain the reduced level.

Behavior strategies

These are cognitive strategies in which the obese patients have to do something active – regarding diet, exercise and the way you live. These cognitive strategies do not translate well in preventive studies as the weight that is initially lost is usually regained. Non-cognitive strategies in which there is no continuing individual involvement include pricing strategy for the foods.



The consumption of soft drinks and the relation of high-fructose corn syrup consumption to the epidemic of obesity. The declining consumption of milk in the United States between 1970 and 1997 and the rising consumption of soft drinks occured this same period. (Drawn from USDA data.)

Human beings are price-sensitive when purchasing food or any other item. Let us examine the instance of calorically sweetened soft drinks. There were lower farm prices of calorically sweetened soft drinks in 1970s, due to drop in price of corn and cheap production of Cornstarch. During 1960 to 1980, price of food rose less than the cost of other components in the consumer price index. High Fructose Corn Syrup made by Isomerase reaction from corn is used for calorically sweetened beverages. At the present time it costs between

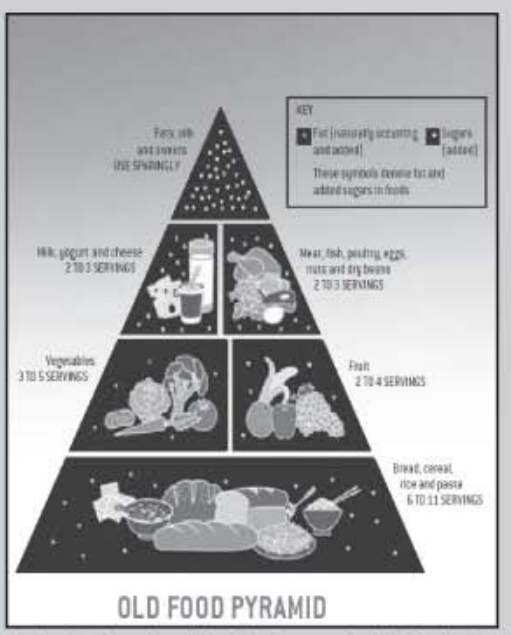
$ 0.30 to $ 1.50 for 1000 kcal of oils/sugar/grain.
$ 5 to $ 90 for 1000 kcal of meat/fish/dairy products
$ 2 to $ 60 for 1000 kcal of fruits or vegetables .

Development of Isomerase technology in 1960s helped to convert starch into fructose. Fructose is a sweet molecule, ideal for soft drinks. Slowly, high fructose corn sweeteners replaced sugar in soft drinks. Fructose can enter the cells without insulin, it enter the glycerol synthesis (TG) efficiently than glucose – soft drink is "fat equivalent".

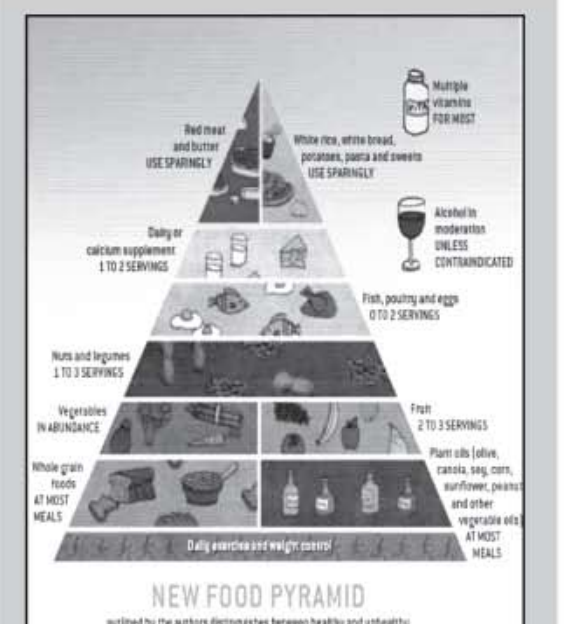
Basic principle for weight reducing diet

Calorie reduction is the key. For this we have to reduce fat intake and reduce simple carbohydrates. To reduce fat intake eliminate fat when possible, substitute low fat products and introduce low fat cooking methods. To reduce certain carbohydrates eliminate sugar, sweets and soft drinks; substitute sugar with artificial sweeteners; limit alcohol intake and consume high fiber vegetables.

The US Department of Agriculture's Food Guide Pyramid introduced in 1992 recommended that people avoid fats but eat plenty of carbohydrate rich foods such as bread, cereals, rice and pasta. The goal was to reduce the consumption of saturated fat, which raises cholesterol levels. Researchers have found that a high intake of refined carbohydrates such as white bread and white rice can wreck havoc on the body's glucose and insulin levels. Replacing these carbohydrates with healthy fats – monounsaturated or polyunsaturated – actually lowers one's risk of heart disease. Nutritionists are now proposing a new food pyramid that encourages the consumption of healthy fats and whole grain foods but recommend avoiding carbohydrates, butter and red meat.



Outlined by the authors distinguishes between healthy & unhealthy types of fat and carbohydrates. Fruits and vegetables are stills recommended, but the consumption of dairy products should be limited.



outlined by the authors distinguishes between healthy and unhealthy types of fat and carbohydrates. Fruits and vegetables are still recommended, but the consumption of dairy products should be limited.

The Green/ Yellow/Red/ Revolution!!

For achieving weight loss more of vegetables and fruits are to be consumed.

DIET Therapy

The four types of diet therapies are:

- STARVATION DIET
- VERY LOW CALORIE DIET
- BALANCED HYPOCALORIC DIET
- DIET WITH SPECFIC SATIETY EFFECTS

There are certain special diets. They are detailed below:

Atkins Diet is a popular weight reducing diet in which carbohydrates are drastically reduced and replaced with plenty of fat and proteins. Atkins diet contains CHO 5 %, Protein 35 % and Fat 60 %.

Ornish diet is another weight reducing diet with very high carbohydrates and very very low fats. Ornish diet contains CHO 75 %, Proteins 18 % and fat 7 %.

Mediterranean Diet is moderate fat diet with 10-15% MUFA and 5-8% PUFA.

DASH diet contains Fat- 27%, Protein- 18% , CHO-55%. Calcium, potassium and magnesium are higher in this diet.

Even though short term benefits of Atkins diet were known, the first comparative study with the conventional diet has been published recently in NEJM. Conclusion of the study in about 60 patients for one year is :-

"The Atkins diet produced greater weight loss (> 4 %) than conventional diet at 6 months, but the significance was not there at the end of one year."

(NEJM 2003 ; 348 : 2082 – 90.)

More than 10 million Atkins diet books were sold in the meanwhile.

Exercise

Exercise causes weight loss, reduces blood pressure, decreases abdominal fat, improves cardio-respiratory fitness and improves lipid profile. Those who are sedentary are prone to be couch potatoes. Hence, Jump! Run! Skip! Ride! & Enjoy.

Treatment – unclear?

It is not always clear what should be the treatment of choice or the goals of therapy. Even if positive trial evidence were to emerge relatively soon, other important issues have been identified , such as how will insulin resistance be measured, what is the cut point to begin treatment, and is the target population only patients similar to those included in the trials? Our knowledge base is such that we cannot yet contemplate drug treatment for insulin resistance, let alone the metabolic syndrome.

Drug therapy?

Indices of insulin resistance have acquired new salience with the development of various pharmaceutical agents, specifically metformin and the thiazolidinediones, that sensitize the body to the action of endogenous insulin. Although initially developed for the treatment of diabetes, these agents also have a potential role in reducing the risk of diabetes and perhaps also of cardiovascular disease in insulin-resistant nondiabetic individuals. Many of us treat patients with clinical evidence of Insulin resistance with Metformin. Is it justified?

"There is a definite need for a treatment that can modulate the underlying mechanisms of the metabolic syndrome and thereby reduce the impact of all the risk factors and the long-term metabolic consequences," Alberti et al., 2006, Diabetic Medicine.

"As these mechanisms are currently unknown… it is therefore necessary to treat the individual components of the syndrome, including obesity, dyslipidemia, abnormal glucose tolerance, and elevated blood pressure."

Pharmacotherapy of Obesity

NEVER use it ALONE

- For patients with a BMI of 30 or above with no concomitant risk factors or diseases

- For patients with a BMI of 27 or above for those with concomitant risk factors or diseases (hypertension, dyslipidaemia, CHD, type 2 diabetes, sleep apnea)

DRUGS	TARGET	DRUG EFFECT
Phenteramine	Central	Anorectic
Ephedrine+Caffine	Central+peripheral	Adrenergic.
Sibutramine	Central Serotonergic +Adrenergic	Anorectic
Tetrahydrolipostatin	Pancreatic lipase	Fat malabsorption
Rimonabant	CB-1 Antagonist	Anorectic

Surgical treatment for Obesity

Surgery is the most drastic method – but it is most effective.

Restrictive Procedures

Adjustable Gastric Banding,
Gastric Plication

Bypass Surgeries

Roux en –Y Gastric Bypass
Liposuction and Omentectomy

Prevention before birth

Life style changes are to start from womb and to be maintained to tomb!

Maternal malnutrition either under/over nutrition causes childhood obesity and abdominal obesity. Hence diet control and exercise are to be observed from Childhood to old age.

Drink to health

We have to replace the fluid we lose. Water is the best drink to quench thirst. For every ml of pure alcohol consumed we lose 10 ml of water in urine.

Pre-Primary Prevention

There is Pre-primary Diabetes and Metabolic Syndrome prevention programme where prevention begins before birth.

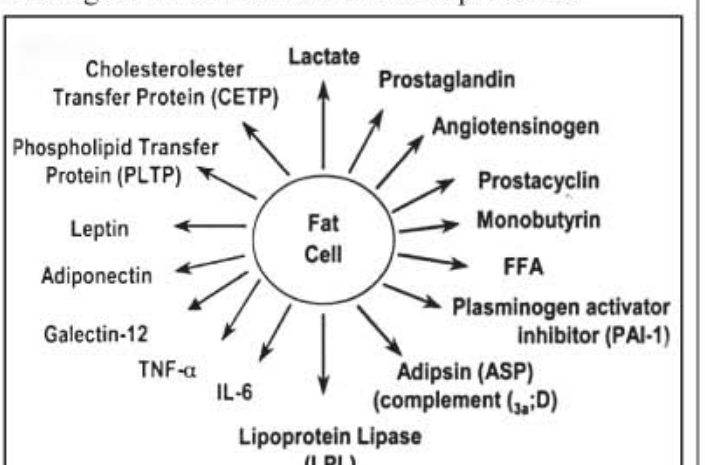
Criticism of Metabolic syndrome

Too much critically important information is missing to warrant its designation as a "syndrome." Until much needed research is completed, clinicians should evaluate and treat all CVD risk factors without regard to whether a patient meets the criteria for diagnosis of the "Metabolic syndrome."

Clinicians should neither rely on, nor require a diagnosis of, Metabolic syndrome to prescribe and encourage what is now a fundamental basis of medicine—weight maintenance (or reduction), exercise, and a healthy meal plan.

The fat cell

The fat cell generates many endocrine products. Cholesterol Ester Transfer Protein (CETP), Phospholipid Transfer Protein (PLTP), Leptin, Adiponectin, Galectin-12, TNF-∞, IL-6, Lipoprotein lipase (LPL), Adipsin (ASP) (complement 3a;D), Plasminogen Activator Inhibitor (PAI -1), FFA, Monobutyrin, Prostacyclin, Angiotensin, Prostaglandin and Lactate are such products.



The fat cell and its endocrine products.

(contd. on page 29)

So said they on the Founder's day



M.C. Mohan
Director, KAL

In 2003, I got involved with Ramesh, whom I know for the last 35 years or so and I got into Kerala Ayurveda. I am speaking very slowly and clearly so that you understand what I am saying. In Kerala Ayurveda if you understand what vaidya or doctor or teacher is telling you and you internalize it then you get maximum value out of it. If you start with a skepticism, with a doubt, the medicine doesn't work. So my piece of advice that I can give you is to propagate the message to all those non-believers. Tell them, "Listen to the teachers of Ayurveda". And it is important that it is not a competition between western medicine and Ayurveda. It is a collaboration. It is understanding from each other, helping each other. It is not I am better, you are no good or you are better, I am no good. Think about the statement- "None of us is as smart as all of us" meaning we can help each other, we can learn from each other, we can make Ayurveda very big without pointing fingers to something else by opening mind. And that way I think the dream of Vaidya Acharya KGK Paniker will come true. It will take long time. It will take some time. Lot of work has been done and we are on that journey and we will get there.

The second message is from Rabindranatha Tagore who wrote a poem some years ago which I learned in high school. "A teacher cannot think he is a teacher. He has to think that he is student. A student should not think as a student, a student should think he or she is a teacher." Teaching is a two way process. Learning is a two way process. Understanding is a two way process. That is why he said a candle cannot burn another candle if it is not burning. A teacher cannot teach unless he is learning. So I am not a teacher actually, I am a student of life. I am learning. I may be sixty seven years old. In some ways I have not grown beyond five years old. In some ways I am only 18. I have lot to learn. So all of us. So we help each other. Ramesh says, I am a teacher. I am not. Actually he is my teacher. He teaches me how to have high dreams. He teaches me how to set high visions. Now I come in, I try to moderate and say what can be done, what we can dream and we have a goal. But some times we have to be reasonable. So it is give and take. Same thing with other people on the board. All really argue and debate and then work together. We are helping each other. And same is the thing here - Ayurveda scholars, Ayurveda teachers, Ayurveda administrators and Ayurveda business. That is why Kerala Ayurveda is so connected with research, development and education.



Jitu Mehta
Director KAL

I shall share my views on what our Chairman Mr. Ramesh Vangal said because I believe Ayurveda is very important in the current time and I think it is our role as Kerala Ayurveda and we have taken it as a vision and our dream to give Ayurveda its new place under the sun. And that is why we made the vision of Kerala Ayurveda to make it as a globally admired company and I believe the way to get the right place for Ayurveda under the sun always starts from research. If we have the right research and the right knowledge and are able to disseminate the knowledge not only to India but to the whole world we would be able to find and deliver the right place for Ayurveda under the sun. I am very confident that with the efforts that Kerala Ayurveda is making and with support from the entire Ayurveda community who are present here and those who are not, we should be able to really take Ayurveda to greater heights and its efforts like the Founder's Day and promoting research on Ayurveda would go a long long way in achieving the dream.

Metabolic Syndrome

Dr.C.I.Jolly*



The seminar organized by Kerala Ayurveda on "Metabolic Syndrome" is one of the most ambitious efforts to place this life style disease in the forefront. This seminar will help to coordinate current and future lifestyle problems and provide a platform to tackle it in the right manner.

What is metabolic syndrome?

The metabolic syndrome is characterized by a group of metabolic risk factors in one person. They include:

- Abdominal obesity (excessive fat tissue in and around the abdomen)
- Atherogenic dyslipidemia (blood fat disorders — high triglycerides, low HDL cholesterol and high LDL cholesterol — that foster plaque buildups in artery walls)
- Elevated blood pressure
- Insulin resistance or glucose intolerance (the body can't properly use insulin or blood sugar)
- Prothrombotic state (e.g., high fibrinogen or plasminogen activator inhibitor–1 in the blood)
- Proinflammatory state (e.g., elevated C-reactive protein in the blood)

People with the metabolic syndrome are at increased risk of coronary heart disease and other diseases related to plaque buildups in artery walls (e.g., stroke and peripheral vascular disease) and type 2 diabetes.

Signs And Symptoms

Symptoms and features associated with metabolic syndrome are:

- Fasting hyperglycemia — diabetes mellitus type 2 or impaired fasting glucose, impaired glucose tolerance, or insulin resistance;
- High blood pressure;
- Central obesity (also known as visceral, male-pattern or apple-shaped adiposity), overweight with fat deposits mainly around the waist;
- Decreased HDL cholesterol;
- Elevated triglycerides;
- Elevated uric acid levels.
- Associated diseases and signs are: fatty liver (especially in concurrent obesity), progressing to non-alcoholic fatty liver disease, polycystic ovarian syndrome, hemochromatosis (iron overload); and acanthosis nigricans (a skin condition featuring dark patches).

How is the metabolic syndrome diagnosed?

The American Heart Association and the National Heart, Lung, and Blood Institute recommend that the metabolic syndrome be identified as the presence of three or more of these components:

- Elevated waist circumference:
  Men — Equal to or greater than 40 inches (102 cm)
  Women — Equal to or greater than 35 inches (88 cm)
- Elevated triglycerides:
  Equal to or greater than 150 mg/dL

*Scientific Advisor, R&D, Kerala Ayurveda Ltd.

- Reduced HDL ("good") cholesterol:
  Men — Less than 40 mg/dL
  Women — Less than 50 mg/dL
- Elevated blood pressure:
  Equal to or greater than 130/85 mm Hg
- Elevated fasting glucose:
  Equal to or greater than 100 mg/dL

What causes metabolic syndrome?

The exact cause of metabolic syndrome is not known. Many features of the metabolic syndrome as associated with "insulin resistance." Insulin resistance means that the body does not use insulin efficiently to lower glucose and triglyceride levels. Insulin resistance is a combination of genetic and lifestyle factors. Lifestyle factors include diet, activity and perhaps interrupted sleep patterns. It is well known that the multistage cycle of a man is very complex.

Natural Therapy:

The primary natural therapy for prevention and treatment of the Metabolic Syndrome is a serious program of weight loss, healthy diet and exercise.

Eliminating processed foods and changing to a diet of whole foods will improve your weight and health dramatically. An ideal diet recommended for metabolic syndrome includes

- fruits,
- vegetables,
- whole unprocessed grains,
- healthy fats, and
- proteins that are low in saturated and trans fats.

Helpful Natural Treatments:

Magnesium
Vitamin D
Cashew nut
Flaxseed
Garlic
Chocolate
Triphala

Nuts And Berries Fight Metabolic Syndrome

Cahew Nut



(Natural News) A number of recent studies have indicated that nuts and berries provide great advantages in averting metabolic syndrome, a cluster of symptoms linked to heightened risk of obesity, cardiovascular disease and diabetes.

Preliminary results from a Spanish study involving 9,000 people suggest that a Mediterranean diet leads to improved levels of cholesterol, blood glucose and blood pressure, all linked to metabolic syndrome. In particular, a Mediterranean diet supplemented with 15 grams of walnuts, 7.5 grams of hazelnuts and 7.5 grams of almonds per day appeared to provide a long-term 50 percent reduction in the risk of cardiovascular disease, more than the Mediterranean diet high in olive oil or the low fat diet. The research was published in the Archives of Internal Medicine.

South African researchers reports that eating a

diet rich in cashew nuts improves the sensitivity of a key reflex for maintaining healthy blood pressure known as the baroreflex.

The baroreflex becomes less sensitive as heart disease develops. People with metabolic syndrome, a constellation of symptoms including obesity, high cholesterol and high blood sugar, have an increased risk of heart disease and diabetes, and also have impaired baroreflex sensitivity.

Cashews are high in monounsaturated fatty acids (MUFA), while walnuts contain polyunsaturated fatty acids (PUFA). Dr. Aletta E. Schutte of North-West University, Potchefstroom and colleagues found that eating a diet rich in walnuts actually impaired baroreflex sensitivity.

Chocolate...A Natural Medicinal Treat



Cocoa powder in dark chocolate contains cocoa phenyl antioxidant flavonoids called epicatechin. That is a long description but similar flavonoids can be found in the skins and seeds of plant foods such as grapes, berries and plum skins. The variety that is found in cocoa is more concentrated than the antioxidants contained in green tea, red wine, berries and plums.

These little powerhouses have been found to be cardio (heart) protective. They help to reduce LDL (bad) cholesterol, prevent platelets from sticking and forming clots that cause heart attacks and strokes, slow the hardening of arteries, decrease blood pressures, decrease insulin resistance, increase insulin sensitivity and increase the metabolism of glucose (sugar). All of this is good news for those with the Metabolic Syndrome.

Benefits from Chocolate:

The flavonoid powerhouses found in chocolate are cardio (heart) protective. They help to:

- Reduce LDL (bad) cholesterol,
- Prevent platelets from forming clots that cause heart attacks and strokes,
- Slow the hardening of arteries,
- Decrease moderate high blood pressures,
- Decrease insulin resistance,
- Increase insulin sensitivity, and
- Increase the metabolism of glucose (sugar).

Important Facts:

Some qualifiers of chocolate are:

- The chocolate has to be the dark variety.
- White chocolate doesn't work at all.
- Milk chocolate doesn't work as well.
- Milk decreases the effects for some reason, so a hot cocoa drink will not be as helpful.
- European chocolate is the best.

Side Effects:

An unfortunate side effect is sugar, fat and about 500 calories in a 100 gram bar. When a person has the Metabolic Syndrome, weight loss

is critical so chocolate has to be a moderate health indulgence. A person struggling with the symptoms of the Metabolic Syndrome would have to subtract calories from somewhere else in order to enjoy these benefits. So always use it in preparations without sugar.

Triphala



Emblica officinalis, Terminalia chebula, and Terminalia belerica are the constituents of triphala,

Emblica officinalis is the richest known natural source of vitamin C. Vitamin C is a potent antioxidant and stimulates the immune system.

Terminalia belerica was found to decrease cholesterol levels in experimentally induced atherosclerosis (plaque build-up on blood vessel walls). Of special note was that the herb also decreased fat deposits in the liver and heart. Organ fat is very difficult to get rid of and is associated with heart disease.

Terminalia chebula has been found to be a potent antioxidant as well as a protectant against radiation. The herb also protects a genetic sequence called a telomere that exists on chromosomes.

Triphala, the blend of these three herbs, has increased activity beyond its individual constituents. Studies have shown it to decrease cancer risk, improve digestion, and boost the immune system

Vital Signs Stabilizer

Statin drugs and insulin sensitizers are the common treatments prescribed to regulate BP and blood sugar levels respectively. However if you're looking out for more natural treatments that are devoid of the long term side effects of medications, there are herbal remedies you can supplement on to calm the rising numbers. The Gymnemic acid constituents of the revered Ayurveda herb *Gymnema sylvestre* endeavors an anti-inflammatory and anti-diabetic action that is relevant to the maintenance of healthy blood sugar levels in the body. Understanding the molecular mechanism underlying the metabolic syndrome is of paramount importance in developing strategies to compact metabolic syndrome.

Lastly let us understand metabolic syndrome and our present global life style.

An emerging silent killer of the new millennium. Now a days we are listening to certain shocking news through the print as well as electronic media as "Collapsed and died". Though alarming we may easily forget this. The reason is till it affects us or our kith and kin we neglect. It is now propagating as an epidemic in all parts of the world even in developing countries. It affects all ages. It can make anybody's life crippled in an unexpected phase of their life. The question still to be answered is Why and How? In the current era of globalization, life is too fast to permit time for health care. But proper awareness can prevent this disaster. So understanding more about metabolic syndrome (syndrome X) is emerging as the need of the hour. Let us look at this syndrome complex very simply and how it can be managed or prevented by our own traditional treatment system of "AYURVEDA".

Metabolic Syndrome and Ayurveda

Dr. Jacob Jayan B. BAMS, MBBS, MD, Dip.GM*



Metabolic syndrome (MS) is a very commonly discussed clinical entity for the last two decades globally, and is associated with a reasonable risk of developing diabetes and accelerated cardiovascular disease (CVD). This may be the reason by which it turned out to be a hot topic. It is also known as "syndrome X" or "insulin resistance syndrome" and is nothing but a collective manifestation of various metabolic derangements.

No unifying mechanisms can explain Metabolic Syndrome. Prevalence varies between 15–23%. The two possible goals in treating Metabolic Syndrome are to prevent diabetes and CVD. Components of Metabolic Syndrome include Obesity, Dyslipidemia (raised TG, decreased HDL) Hypertension, Insulin resistance and raised Fasting Plasma Glucose. As per NCEP ATP III (National Cholesterol Education Program Adult Treatment Plan III) - definition of the Metabolic Syndrome is same. The components of this syndrome are same. Insulin resistance – the key link between CVD and type 2 diabetes and is the core of this syndrome complex. Looking at the statistics, 78% of patients with Metabolic Syndrome (MS) have insulin resistance, 48% of patients with insulin resistance have MS. Cardio Vascular Death is the leading cause of death in 70% of patients with type 2 Diabetes Mellitus. Population with Impaired Fasting Glucose has 2 times higher risk of CVD and death. Clinical implications of IRS (Insulin resistance syndrome) may be the following. Insulin resistance is the common factor linking the CV risk factors like obesity, hypertension, dyslipidemia, type 2 DM and hyperinsulinemia to metabolic syndrome. This entity is often unrecognized in the initial stages. Early treatment with exercise, diet and weight loss provides means for prevention of DM and CVD. Obesity may be defined as an excess of subcutaneous fat in proportion to lean body mass. This may result in the hypertrophy and hyperplasia of adipose tissue. Adipocyte derived hormones called adipokines play a key role in adipose tissue metabolism and resulting in the development of insulin resistance. Beneficial adipokines are, Leptin and Adiponectin, while the Harmful adipokines are, ResistinTNF-α and IL-6. Adipose tissue dysfunction is an important abnormality detected in Metabolic Syndrome. Hypertension and Metabolic Syndrome are showing a close association. Hypertension is present in a significant percentage of persons with evidence of Insulin Resistance and is estimated to occur in one third of people with metabolic syndrome.

Insulin Resistance is associated with compensatory hyperinsulinemia. Hyperinsulinemia results in - Arterial stiffness, Activation of sympathetic nervous system, Activation of RAAS (Renin Angiotensin Aldosterone mechanism), Increased endothelin-1 expression and ultimately leading to Direct Na+ and H_2O retention lead on to hypertension. As per the guidelines of the International Society of Hypertension – and JNC (Joint national committee), the target blood pressure is 140mm of Hg systolic and 90 mm of Hg diastolic. Hypertension and Cardio Vascular risks are related ie. BP more than 140/90 mm Hg is a clear risk factor for Coronary artery disease, Heart failure, stroke and renal failure if Hypertension is undiagnosed and untreated. For individuals 40-70 years of age, each increment of 20 mm Hg in systolic BP or 10 mm Hg in diastolic

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Blood Pressure doubles the risk of CVD across the entire BP range from 115/75 to 185/115 mm Hg.

Ayurvedic Perspective

A pure and straight forward correlation may not be possible from our ancient medical literature to explain this entity called metabolic syndrome. But if we go by analyzing each component of this syndrome complex, and searching from our literature logically, we may be able to explain all these manifestations with evidence. When "Joslin" proclaimed about the relationship of obesity (excessive adipose tissue) to that of diabetes mellitus two decades back to the modern medical fraternity, that was new information for them. Since then, they recognized the relationship of diabetes to adipose tissue and the difficulty in managing the complications of DM and its integral relationship to that of obesity to the treatment scenario. Centuries back the great seers of India explained well about this relationship without any doubt. So naturally we can consider this clinical entity and design a specific therapeutic approach based on the fundamental principles of Ayurveda. Here I am trying to highlight the possible correlation with textual evidence.

Ati-sthaulyam as per Caraka Samhitaa (Sootra - 21) is the result of surfeit i.e. fat out of proportion to other *dhaatus*. This may be genetic or acquired and have eight handicaps leading to shortened "LIFE."

As per Susruta Samhitaa (sootra-3) – reduced tissue fire of fat and muscles (*maamsa-medo-dhaatvagni-maandyam*) is the cause of obesity. Vaagbhata in Ashtaanga Hrdaya (Sootra-14) states that obesity and diabetes can coexist with other diseases. Usually as a part of surfeit, food is responsible for development of diseases in individuals. The difference is that wholesome food balances health and unwholesomeness of food causes the emergence of disease. So in the etiopathogenesis of this disease entity, a complex interaction of genetics, environmental factors and lifestyle choices are playing a vital role. Infectious and toxic 'insult to the immune system' in predisposed person develop such illness.

According to Charaka Samhita "the obese and gluttonous persons who avoid physical activity are snatched away by death disguised as diabetes (*prameha*)" (C.N-4 /41). Diabetes is further subdivided into congenital *(sahaja)* or Type 1 DM and lifestyle disease (acquired – *apathyaja-madhu-meha* – Type 2 DM. This may be further correlated with additive and reductive disorders (*santarpanottham* and *apatarpanotthaam*). Defect inherited through the maternal and paternal routes is described as "*beeja-dosha*". This is very difficult to treat, mostly incurable and is vulnerable to develop all related complications. Being congenital it shows the familial nature and genetic association of the disease. –Type -2 DM (*apathyaja madhumeham*) is the most common variety. In fact, in Ayurveda twenty different diseases of increased or turbid urination are considered as diabetes (*prameha*). Diabetes mellitus (*madhumeham*) is only one among them. Acquired DM (*apathyaja madhumeham*) is with an asymptomatic presentation and complex etiology. The subclassification of Type 2 diabetes mellitus into Obese Type 2 diabetes mellitus (*santarpanottham*), and Non-obese Type2 DM (*apatarpanottham*) is very relevant because when we design a therapeutic approach we have to follow different principles.

Prameham due to improper food, daily routine and other environmental factors bio regulatory principles like Kapha (Predominant Bio-regulatory Principle - BRP) looses its normalcy. Insulin present, receptors are there but no proper interactions – results in hyperinsulinemia. Insulin resistance resulting in dysregulation of *Doshas* (BRP) & *Dhaatus* (Building blocks) *meda* (Adipose tissue), *maamsa* (Muscular tissues), *rasa* (lymphatic system) and *rakta* (blood and blood vessels) Adipokines secreted by fat cells can affect insulin action. Leptin & Adiponectin seems to increase the sensitivity to insulin by increasing hepatic responsiveness. Pitta getting into a state of

contd. on page 36

VAIDYAM



Clinical Synopsis Metabolic Syndrome

Dr. Sahny M. Soman BAMS, MBBS*

SUMMARY 1st SET

Outcome of Ayurvedic Treatment in Metabolic Syndrome

Description Of Condition

26 years old female patient, a known case of Metabolic syndrome featured by obesity since childhood, Type 2 DM for 12 years under control with modern medicine, PCOD for 16 years for the last 10 years having irregular menstrual periods characterized by scanty discharges, Hyperlipidemia-Familial hypertriglyceredemia for 6 years and thyroid disease for 1 year on regular treatment - under control.

Status at Time of Admission

For the past 1 year she was finding it difficult to keep her lipid profile within normal limits. There was uncontrolled increase in body weight due to which she developed pain on both lower limbs especially in the knee joints.

O/E PR-86/mt, BP-130/90mm/Hg, body wt. was 104 kg ht. 169cm. and BMI was 36 and an abnormal Lipid profile with features of familial hyperlipidemia.

Diagnosis

Metabolic syndrome featured by PCOD / Type2 DM / obesity / Familial Hyperlipidemia / osteoarthrosis of knee joints.

She is clinically assessed abiding Ayurvedic principles and diagnosed as, *Atisthaulyam / Prameham / Medovr̲dhivikaara*, admitted with *Vaatarakta* – affecting knee joints (b/l).

Treatment Focus

Treatment focus was to bring down excess body weight, to bring down excess lipid level, to reduce pain in the knee joints and to ensure normal blood sugar status.

Treatment Given

A. Internal medicines

- *Varan̲adi kashaayam̲*
- *Eran̲da-sukumaaram̲* 1tsp early morning with *kashaayam̲*
- Liposem Tab 2 – 0 – 2
- *Varaasanaadikashaayam̲* as internal medicine twice daily.

B. Treatment Procedures

- *Udvartanam̲* with *Kolakulathaadi Coorn̲am̲* in the initial phase of treatment.
- *Kaat̲i-dhaara (dhaanyaaml̲a-dhaara)* in the initial phase of treatment.
- *Matraa-vasti* with *Pippalyaaditaila* in the final phase of treatment.
- *Medo-hara-vasti* in the final phase of treatment.

Medo-hara-vasti

- *Kaat̲i* 100ml
- Decoction: *Triphala kashaayam̲* 300ml

*Assistant Surgeon PHC, Thalliyoor, Tiruvalla
Formerly Resarch Co-ordinator, Clinical Research Wing, KAL

- Honey 75ml
- Medicated oil: *Varanaadi-vasti-tailam* 75ml
- Paste of long pepper and nut-grass tuber (*kalkam - pippalee + mustaa*) 25gm
- Rock salt (*saindhavam*)15gm
- *Yava-kshaaram* 5gm

Benefit

Daily evaluation during ward rounds and weekly laboratory screening done showed improvement in her lipid profile, decrease in her body wt. (nearly 7 kg.) and BMI became 34. There was reduction in knee joint pain. BS level was kept under control. There was improvement in quality of life.

Date	Reading [I] Marked on VAS(Done by patient)	Grade
Initial	0 1 2 3 4 5 6 7 8 9 10 (No Pain) (Worst Pain imaginable)	Severe
	0 1 2 3 4 5 6 7 8 9 10	Moderate
	0 1 2 3 4 5 6 7 8 9 10	Mild
	0 1 2 3 4 5 6 7 8 9 10	Moderate
Final	0 1 2 3 4 5 6 7 8 9 10	Mild

LABORATORY EVALUVATION

Date	**Total.S. Choel (mg/dl)**	**TGL (mg/dl)**	**HDL (mg/dl)**	**LDL (mg/dl)**	**VLDL (mg/dl)**	**FBS (mg/dl)**
TOA	731	5844	102	108	521	165
2ND WK	650	4966	80	172	398	160
4TH WK	442	3230	72	50	320	163
TOD	452	3238	68	54	330	132

SUMMARY 2nd SET

Outcome of Ayurvedic Treatment in Hypercholesterolemia

42 year old female patient, a known case of systemic hypertension, not on any medicine, freshly detected as a case of hypercholesterolemia. Family history of hypertension and type 2 DM (of father and one sister).

O/E all systems-NAD.

Diagnosed as a case of Medo-vrdhi-vikaara.

Drug – R+L, Pt. no. (R+L) 1, Treatment duration 6 weeks

	Before treatment	After treatment
T.Chl	266	230
TGL	186	122
HDL	34	40
LDL	195	166
VLDL	37	24

SUMMARY 3rd SET

Outcome of Ayurvedic Treatment in Obesity

(Observational Study - Study Period 4 Weeks)

Patient No.1	**Age.53 yrs**	**Treatment Duration. 4 weeks**
Parameters	**Before treatment**	**After treatment**
WEIGHT	101 Kg	94 Kg
BMI	35.36	32.91
W/H Ratio	1.01	0.97
MAC	R-37 cm	R-33 cm
	L-36.5 cm	L-33 cm

Patient No.2	**Age.80 yrs**	**Treatment Duration 4 weeks**
Parameters	**Before treatment**	**After treatment**
WEIGHT	89 Kg	85 Kg
BMI	31. 53	30.11
W/H Ratio	1.02	1.00
MAC	R-34 cm	R-32 cm
	L-33 cm	L-32 cm

Treatment Given

Internal Medicines

1. *Gandharva-hasthaadi kashaayam* at 6 am.
2. *Varanaadi kashayam* at 6 pm.
3. *Vilangaadi choornam* 5 gm once daily with *kashaayam*

Therapies

- *Udvartanam* with *Triphala choornam* + *yavam* + *asana-tvak kashaayam*
- *Takra-dhaara*
- *Medo-hara-vasti*

contd. from page 19

Treatment outcome and interpretation

Body weight naturally increases with age at the rate of 0.25 kg per year. For those who are obese (i.e., >30), <5% weight loss may reduce risk but it is unsatisfactory. Attaining stable weight is the population goal. Those who are overweight (> 25) >15% weight loss ± reduction in risk is excellent. For normal weight people (up to 20) weight normalization is ideal but rare.

Conclusions

- Obesity is an after effect of the easy availability of inexpensive foods and sedentary jobs.
- Obesity is an after effect of technological advance and its management is a challenge for technological society.
- Till then low caloric, low fat, small frequent feeds with plenty of water and sleeping more, is good

contd. from page 20

a stage in every child when such a revolt occurs. This denial of parentage is not usually long lasting. But in many it may linger. Such children grow up to deadly opposite personality to the parent. Strict parents usually have spoiled children. You cannot maintain the strings of control when the child is an adolescent. Once let loose, the child happens to be a kite without string. It might crash land anywhere.

We also should remember that we are living in a changed world. Once there was no competition to get a seat for commerce. Science was held supreme. Now the scene has changed. Best brains go for commerce. The pulse of change should be palpated by the parents. Instead of trying to make our children what we want, it is always better to let them what they want to be, if their ambitions have right orientation. Hence if your son is not becoming a doctor, engineer or an IT wizard; let him be an artist, if he has the required talent.

Once I was scolding my five year old granddaughter pretty long for her mischief. She lent me a patient ear. Later when my wife asked her about the event she replied. "Oh! He was talking loudly to me for long. I dint get a word. I dint care too. I think he is much worried about me." When I understood the attitude of the child I learned a great lesson. Sometimes the worries of the adults about the children are unfounded. The children may be in a better position to judge what is what.

The loving (step) mother Yasoda has corporally punished her child Kannan many a times. She has even kept him in confinement. Once when he was caught eating soil, the mother asked him to open his moth. To her wonder she could see the whole world in his open mouth. Each child is such a mine of secrets. Opening their mouth they could reveal a whole world that you have never witnessed. So spare the rod and speak to the child. Let him open his mouth and mind so that you can know him better.

- Editor - in - chief

DECLARATION

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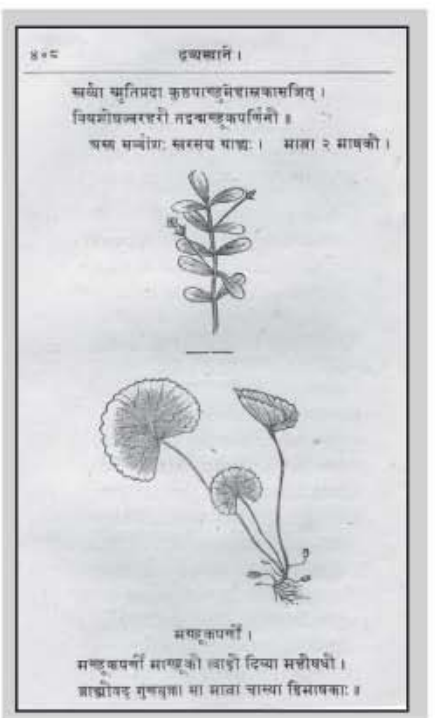
Ernakulam
31st Jan. 2009

VAIDYAM

A Worthy Treasure of Ayurvedic Knowledge

The period of compendia in Ayurvedic history came to an end with Bhaava-prakaasa of 16th century CE. This book was written in Bengal. Saarngadhara samhitaa, a treatise worthy of mention after Vaagbhata also hails from Bengal. Thus Bengal happens to be prominent landscape in Ayurvedic map of India. The Kaviraajs of Bengal are noted for their ayurvedic wisdom and insight. They were very receptive and had the opportunity to acquaint with western medicine as Calcutta was a major abode of the English in India. Hence Ayurveda adopted wisdom of modern medicine mainly through Bengal. It is not surprising that the immortal character Jeevan Masaai was penned down at the Bengali backdrop.

After Bhaava-prakaasa Bengal endowed us with a great treasure of ayurvedic knowledge titled 'Ayurveda Vijnaana' compiled by Kaviraaj Vinod Laal Sen. In between Bhaava-prakaasa and this book, there were only two books worthy of mentioning.


४०८ द्रव्याणि।

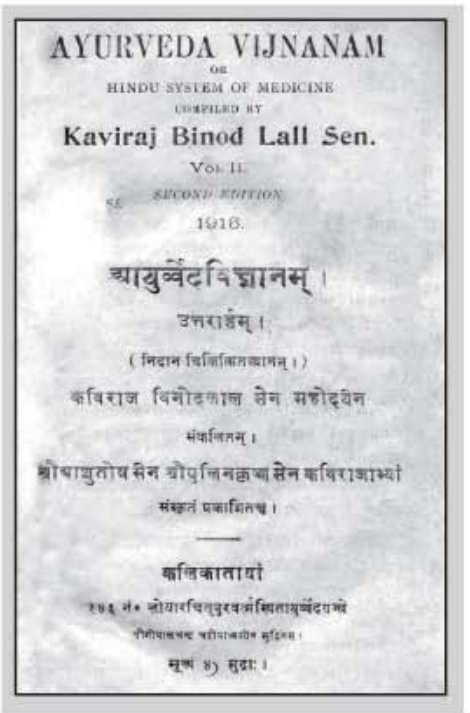
मण्डूकपर्णी।

मण्डूकपर्णी मण्डूकी ताड़ी दिव्या मतीषधी।
ब्राह्मीवद् गुणवृक्षा सा माता चास्या द्विमातृकाः॥

They are Yoga-tarangini and Aayurveda Saukhyam (Todaraananda). Both of them of 17th century CE. Yoga tarangini is authored by From Trimalla Bhatta hailing from and the later book is by Todarmal the courtier of Emperor Akbar the great.

The book to be detailed here, Ayurveda Vijnaanam alias 'Hindu System of Medicine' as seen titled in the second volume is having a lot of unique features. Though not designated as a compendium (samhitaa) the book is worthy of considering so as it is embraces all the branches of Ayurvedic knowledge. It seems that even Bhaava-prakaasa is not designated as a compendium because it is 'polluted' by the knowledge of the west. This book also incidentally has included many western information available at that period.

The frontal pages of both the volumes, reproduced here, are of the second edition. Both the volumes are available in KAL archives. According to Dr. P.V.Sharma the book was written in the last part of 19th century CE. The second part was first published in 1889 CE from Culcutta. The second revised edition of the book was published in 1917, also from Culcutta. The book is completely written in Sanskrit. The first edition was provided with a Bengali commentary. This commentary is not seen in further editions. The declaration of the first edition is written by the author himself. In it he has noted that his best friend Kaviraaj Yogendracandra Bandhopaadhyaaya has helped him in compiling the work. The second edition is scrutinized redeemed and edited by two persons – Kaviraaj Aasutosh Sengupta son of the author and Kavi-bhooshana Sri Pulinakrshna Sengupta, the grand son of the author. As per the declaration of the second edition, by Sri Pulinakrshna Sengupta, both he and his father have taken pain to correct and elaborate the first edition. There were no pictures in the first edition.


AYURVEDA VIJNANAM
OR
HINDU SYSTEM OF MEDICINE
COMPILED BY
Kaviraj Binod Lall Sen.
Vol. II.
SECOND EDITION
1916.
आयुर्व्वेदविज्ञानम् ।
उत्तरार्द्धम् ।
(निदान चिकित्सास्थानम् ।)
कविराज विनोदलाल सेन गुप्तेन
संकलितम् ।
श्रीयुतोष सेन श्रीपुलिनकृष्ण सेन कविराजाभ्यां
संस्कृतं प्रकाशितञ्च ।
कलिकातायां
१४६ नं० जोड़ासंकुवस्थसंस्कृतायुर्व्वेदयन्त्रे
श्रीकेदारनाथ पाखिरेन मुद्रितम् ।
मूल्यं ४) सुद्राः ।

The second edition in its part on materia medica contains engravings of some plants. These pictures, though not very realistic, help us to have a rough idea of some controversial drugs. The pictures also might generate controversy towards identification of drugs. For example, the picture of *'parooshaka'*, does not seem to match with our concepts of the plant. It should be a type of date. In Kerala some people consider the plant as cycas. The picture given does not match with either of them.

The book published in two volumes has four parts as follows:

Part 1 – Part of aphorisms – 78 chapters

Part 2 – Part on the body – 15 chapters

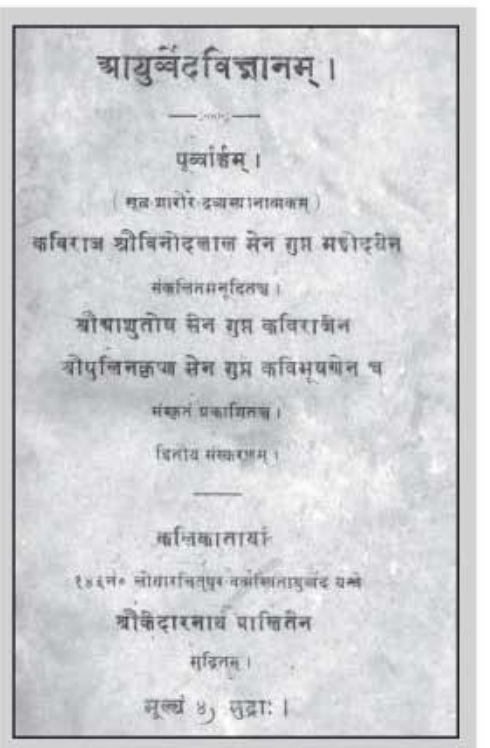
Part 3 – Part on drugs – 41 chapters with appendix and

Part 4 – Part on diagnosis and treatment – 82 chapters.

Thus on the whole there are 216 chapters. The second volume is solely composed of the fourth part. It is interesting to note that the first part containing aphorisms also contains information of chemical medicine. This is a clear cut indication of divergence from former treatises and the turn of therapy from herbal to chemical.

The treatise has adopted many western medical information of the period. But it should be noted that even when the author is incorporating names of diseases, translated into Sanskrit, the treatment provided is basically ayurvedic. The incorporation of details of blood vascular system in pulse reading (Part 1. Ch. 45), mention of pulse rate, examination of the eye, constriction of pupil by the use of opium, palpabral edema due to disease of kidneys etc. are clearly adopted from western medicine. Examination of heart and lungs (part 1. Ch.46), auscultation also are adopted from modern science. The first volume also provides the pictures of surgical instruments and equipment used for chemical medicine. Some anatomical pictures such as those of brain, arterial system etc. are also incorporated.

In chapters 61 to 67 of first part the treatise provides detailed description about chemical medicine. Though the descriptions of anatomy and physiology mostly tally with modern knowledge,


आयुर्व्वेदविज्ञानम् ।
पूर्व्वार्द्धम् ।
(सूत्र शारीर द्रव्यस्थानात्मकम्)
कविराज श्रीविनोदलाल सेन गुप्त मष्टोदयेन
संकलितमनूदितञ्च ।
श्रीयुतोष सेन गुप्त कविराजेन
श्रीपुलिनकृष्ण सेन गुप्त कविभूषणेन च
संस्कृतं प्रकाशितञ्च ।
द्वितीय संस्करणम् ।
कलिकातायां
१४६नं० जोड़ासंकुवस्थ संस्कृतायुर्व्वेद यन्त्रे
श्रीकेदारनाथ पाखिरेन
मुद्रितम् ।
मूल्यं ४) सुद्राः ।

the total number of bones in the body is mentioned to be 246. It is stated that this is as per the opinion of Aurabhra.

24 new drugs are mentioned in the part of material medica. Potato, cannabis, red chilly, isbagol, senna, wild onion, devil's cotton, ayapon, saalamisree, roomee mastaki, tea, yellow pumkin etc. are among this new addition. It is also worth noting that many volatile oils are also added to the group of oils. Clove oil, turpentine, nutmeg oil, cinnamon oil etc. are thus met with here. These volatile oils do not appear in former treatises.

In diagnosis and treatment many new ideas are represented. After the classical treatment of fever, many new ayurvedic prescriptions are suggested. Opium is considered as the ultimate treatment of diarrhea. Heart diseases are described as per modern knowledge under the names *aavaranika* and *prdhuka*. But in its treatment digitalis is not mentioned. Syphilis and gonorrhea are named as *aupasargika upadamsa* and *aupasargika meha* respectively. New diseases such as *snaayusoola* (neuralgia), *skhaalitya* (weakness and tremor of hands) and *aagantuja pakshaakhaatam* (hemiplegia due to infection) are also detailed and their treatment is prescribed. Surgical therapy is mentioned for many eye diseases. Cow-pox (*dhenu-stanya-masoorikaa*) is mentioned. Among diseases of women, hysteria (*yoshaapasmaara*) is specially mentioned. *Baadhaka* is another group of four diseases resulting in subfertility.

The book is unique as it includes many effective traditional familial formulations, not recorded formerly, along with important ones from classical treatises. The author has stated this fact in the introduction. The book is a real boon to the practitioners as it is a worthy treasure of ayurvedic knowledge.

contd. from page 4

in touch with the issues in the field of Ayurveda. Last year we contemplated on Higher education on Ayurveda as it was a burning issue and the conclave shed light into the various aspects of the problem. This year we have selected a clinical problem, the metabolic syndrome, which is not much discussed in ayurvedic lines.

Experts are here to discuss and share their wisdom on the various aspects of the metabolic syndrome. Even the status of the condition as a syndrome is often questioned by many scientists. Yet the syndrome is mentioned quite frequently whenever we discuss life style diseases. Hence we thought that a better understanding of the medical problem is essential and it is worthy of a deep contemplation on an ayurvedic platform. Hence it was selected as the topic of today's intellectual conclave.

As a humble contribution in promoting Ayurveda, KAL is proud to have instituted two prestigious Awards viz. Vaidyan K.G.K Panicker Memorial Award and Kerala Ayurveda Research Award.

The Vaidyan KGK Panicker Memorial Award for the best outgoing ayurvedic graduate from the Ayurveda colleges of Kerala. The award consists of prize money of Rupees twenty five thousand, a memento and a certificate of Merit. It will be presented to the awardee today before this august assembly.

To inspire and promote proper academic research, Kerala Ayurveda has instituted the Kerala Ayurveda Research Award. This Award consists of four components. They are the Gaveshak Ratna Award for the author of the best thesis, the Acharya Ratna Award for his or her guide and Appreciation prizes for other finalists and their guides.

The cash award for Gaveshak Ratna is Rupees two lakhs and that for Acharya Ratna it is rupees fifty thousand.. The name of the winner will be announced soon and the awards will be presented.

The Appreciation Prize consists of Rs.25,000/- to the finalist and Rs.10,000/- to their guides.

In addition to the prize money, all the awardees will be presented with a special memento and certificate of merit.

Mending the mind

Dr. C. R. Agnives

Mending the mind is not an easy job either. Once out of track, it is very difficult to put the mind back on track. This is a task which ordinary physicians find it tiresome. The major part of ayurvedic treatment comprise of logical therapy (yukti-vyapaa-aasraya-cikitsaa). This aids only in the preliminary conditioning of a mental patient. It is like a pre-operative procedure. It is important, but it is not all. Counseling is the major part of psychiatric assistance and the job of the doctor here is to impart wisdom and ability to self control and to orient the patient. We find that in many mental diseases, all these three are totally lost. This task requires special training for the doctor. It invites the employment of non-material treatment (adravya cikitsaa) which is full of techniques rather than drugs (upaayaabhipluta). In spite of the extensive philosophical contemplations, the techniques for psychotherapy, though mentioned are not detailed in Ayurvedic treatises. It is now an area we have to replenish and enrich with modern psychology.

There are experts in ayurvedic psychiatry. But their expertise is limited to traditional methods and many such methods are considered unethical in a cultured society. For example corporal punishment of violent patients is no more considered ethical. Even confinement of a dangerous patient by chaining will create news in the media now. In fact the media is on constant watch on such events.

The preconditioning of the patient with purification therapies is mainly intended to mend the body and to correct the vitiation of physical humors. It is well known that only a healthy body can lodge a healthy mind. Purification therapies and drug therapy will also mend the mind to a good extent. We know that the effect of purification also includes clarity of mind and the faculties. But once the body is corrected, mending the mind too deserves attention. Here the winning of the mind (satvaavajaya) is important. As we bind the straw with straw, the mind is to be controlled by the mind itself. This ability of mind is lost in mental disease and to help the patient in regaining it, the doctor should have patience and perseverance.

According to Ayurveda mental diseases can be broadly classified into two. They are derangement of mind with an evident organic base and derangement of mind without evident organic base. In other words we may call them structural diseases and functional diseases. Insanity (unmaada) and epilepsy (apasmaara) fall under structural disorders. It is interesting to note that these diseases are classified mainly on the basis of the humor involved. Thus we have insanity due to vaata, pitta and kapha. Insanity due to poisons is another group. Poisons too damage the structural integrity of the body and this group also could come under the humoral type of structural derangement. In fact treatises consider insanity due to poisoning as a tri-humoral derangement. There is yet another trihumoral variety of insanity, without involvement of extrinsic poisons. In this type the derangement is due to intrinsic formation of filth of endotoxin. Insanity due to evident mental trauma is yet another type. Here mental trauma is in the form of severe losses, such as loss of money, death of spouse or beloved children. This type of insanity may be considered as purely mental. But our seers opt it the otherwise, it is also considered as humoral. It can be considered that the insanity due to excessive fear, grief and lust are predominant in vaata, as fever due to these is considered as predominant in vaata. Here the predominance of vaata is on the plane of trihumoral vitiation. In insanity there is vitiation of both physical humors and mental pollutants and as per the pathology they migrate upwards to affect the mind, corrupt the intelligence and manifest as loss of intelligence, critical knowledge and memory and the patient loiters doing things without proper

premeditation.

In the case of epilepsy, though not always, a focus of increased electrical activity could be demonstrated in E.E.G. and hence the inclusion of epilepsy as a physical disorder is substantiated. Ayurveda classifies the disease into four purely on the basis od physical humors viz. vaata epilepsy, pitta epilepsy, kapha epilepsy and trihumoral epilepsy.

In another group of mental derangements named as bhoota graha (affliction of evil spirits / possession syndrome) the disease is not classified according t the predominance of physical humors. Instead, they are recognized according t their simulation of mythological types or familiar objects. We may argue that these conditions are also backed by the three humors. In the case of fever due to affliction of evil spirits it is stated that these fevers are mainly due to trihumoral derangement. May be but when we come to the treatment aspect, material treatment is minimal in them and measures of divine treatment have more importance.

Even mental disorders of the first category, i.e., the structural or humoral variety, divine measures are advocated. But they are not the first choice. They are last resorts. It is worth mentioning that in the incurable stage of almost all diseases our seers advocate divine therapy. This shows that the ordinary logical treatment has reached their limit in the condition. But in the case of possession syndrome the first choice is divine treatment. Medication is just a supplement. Psychotherapy too is having a say in possession syndrome.

One thing to be remembered is that all mental disorders require a platform of mental weakness. Usually mental diseases occur only to the weak minded. It is true that even strong minded persons may be affected by mental diseases if the trauma is very severe. But persons who are overactive and considered by many to be 'brave' like tough guys, militants and soldiers are not really mentally strong and hysteric conversions occur very frequently to them. One with a strong mind is mostly governed with satva and not by rajas and tamas.

Possession syndromes are mostly prompted by guilt complex. In enlisting the precipitating causes of possession syndromes, this fact has been sufficiently emphasized by our seers. The basic cause of possession syndrome manifested a s sudden personality change is intellectual error (prajnaaparaadha) which is immediate or latent from the past. The precipitating factor augments the guilt complex and makes it strong enough to manifest personality changes. Hence the precipitating factor is considered as an opening (chidra).

Once the mind is deranged due to organic or functional factors bringing back it to normalcy is a difficult task. It is like putting back a derailed train to the rails. Most of the ideal characters in the patient conducive to quick and easy cure are lacking in patients with mental derangement. It is considered that the patient should be obedient to the treating doctor, communicative and should have a strong mind. These cannot be expected from a mental patient. Even in trivial neurosis all these are seriously damaged. This makes treatment of mental diseases very difficult. Mental diseases tend to escalate and recur because of the low mental strength of the patient. Hence constant reinforcement from the part of the physician is essential to keep the person in mental health.

According to Ayurveda, even mental affects such as anger, sorrow, greed and attachment are considered as diseases. Even ordinary people are not enjoying full mental health because of the manifestation of these affects. Though perfect metal health is a rarity, appreciable mental health is expected from normal individuals who are able to control these affects. When mental strength is very low, the individual loses the ability to control then affects and become prey to them. Constant reassurance by way of counseling will be necessary to the patient at a stable level of mental integrity. This has generally caused a bad name to physicians who take care of mental patients. People think that the doctor is purposely delaying

cure and maintaining the patient for further sittings as a means of earning money. But many know the fact once a mental patient, individuals tend to be mentally handicapped for ever that he may require psychological and medical assistant oft and again.

Developing a rapport with the patient is another difficult task. If the physician is unable to build up rapport at the first visit itself, he might never attain it. From the first interview itself the patient should believe that the doctor can understand his problems and can be helpful. Maintaining this rapport through out is also very important. But excessive rapport might generate over dependence of the patient to the doctor. He will try to get assistance from the doctor even for trivial problems and will make constant revisits. In a way the patient wants the doctor to think for him. He just transfers his problems to the doctor to be solved just like a poor school boy asking his parent to do the home work.

There is one thing I would like to remind my readers. Though we are proud of the great heritage of psychological insight of Ayurveda, the practical aspect of implementing psychotherapy is not detailed in ayurvedic treatises. There are mentions of certain measures. But how to implement them is not described. This is the job we have to complete today by acquiring in depth knowledge from modern clinical psychology.

(contd. from page 26)

imbalance. (Moderate involvement) Metabolism altered – insulin sensitive tissues fail to use glucose .....INSULIN RESISTANCE– liver produces more glucose through alternate pathways ..... HYPERGLYCEMIA. Ultimate manifestation by "*aavṛta vaata*" (Dysregulated signal transduction)

Management

Lifestyle interventions constitute the cornerstone of treatment in metabolic syndrome. Loosing body weight by diet regulation and exercise, smoking cessation are very important in the management. Diabetes Prevention Program showed that patients who lost 7 kg and walked 150 min/week reduced their risk of progressing to these metabolic complications by 58%. Role of diet in Metabolic Syndrome reveals that Dietary management protocols will be tailor made in each situation. We must choose foods from all the basic food groups, to keep weight in a healthy range, or eat plenty of fruits and vegetables. If the required calorie is about 2000 calories each day, about 2 cups of fruit and 2½ cups of vegetables, (preferably dark colored, as they contain antioxidants) should be included. Eat 3 servings or more of whole-grain foods per day, at least half the grains should come from whole grains. Always choose lower fat foods. Preferably less than 10 percent of your calories should come from saturated fatty acids. For that choose foods with little or no Trans fat. Role of exercise in Metabolic Syndrome is a well established truth. Goal is 30 minutes of moderate-intensity physical activity, above usual activity, at least 5 days in a week. Aerobic exercise at least 10 min at a time (brisk walking, jogging, swimming). Actual benefit of exercise is it improves insulin sensitivity, enhances glucose disposal and results in less atherogenic lipid profile. As per the basic principles, prevention is the major strategy targeting Type2 DM and its complications. Principle of treatment of obesity (*ati-sthaulyam*) is to plan therapeutic measures to encounter its numerous complications. Treatment includes physical and mental activities which must be properly planned and executed. Diet regulation is mandatory.

To conclude, Vaagbhaṭa (A.H.Soo. 14) states that potential formulations to correct the disequilibrium (*kapha-medo-anila*) should be identified and used. Early identification of these clinical entities and intervention are vital. Exercise and rejuvenation treatment forms the mainstay of treatment.

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