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ALKALINE DIET: AN ANSWER TO MOST MODERN SO CALLED "LIFESTYLE DISEASES": 9 MONTHS OF ALKALINE DIET – REDUCTION OF HBAC1 FROM 10.5 TO 6.5

Homeopathy

Dr. Vidushi Agrawal

DHMS (Mum), HMD (Lon), DDHN (India), DDNE (India) Registered Homeopath, Practicing Dietician & specializing in treatment of Obesity, Diabetes, Hypetension, Hypelipidemia, Thyroid Problems

ABSTRACT

Alkaline Diet is one of my favorite topics that I can always speak about at anytime of the day. It's just not because I have been practicing alkaline diet in my Medical Practice as a Dietician, however, I have got excellent results over a period of 10 years now into practice of alkaline diet, and remarks from SPECIALISTS for my patients, whereas the Diabetologist has said to one of my patient (whose case I am going to represent here) oh vow, your report is like a book report. I understand that most diseases today are more of a Lifestyle Disordered Disease rather than actual disease perse. In olden days, the diseases which were considered to be diseases of the aged or senior citizens, are now touching kids as small as not only adolescents but also new born. Hence seeing the wonderful results, I would like to present one case in every article of mine with reports and permission of the patient, which can be used to share with public for the purpose of sharing more practical information than theory. First I would touch upon the basic of Alkaline & Acidic Environment in our body and then take one food article at a time and present a case
Any questions, can be asked with respect to the article & I would be happy to answer them

KEYWORDS

Introduction

A quick & short introduction to Alkaline Environment in Human Body

We know the pH of blood is 7.35 – 7.45 (slightly alkaline) & healthy pH of urine is 7.00 – 8.00 (slightly alkaline). Else the minerals which help to keep our blood alkaline in nature, have to leave their original home and make their way into the blood to keep blood alkaline; hence weakening their organs of origin.

The objective of alkaline diet is NOT to try and raise the pH of the blood. The whole purpose of the alkaline diet is to prevent the body from having to do the regulating, so that the minerals stay where they are.

Fact is alkaline diet is trying to neutralize the extra acid that is produced on account of different activities in the body like breathing, metabolism, walking, running, mental activities, polluted environment around, acidic foods etc .

This in turn prevents various metabolic disorders in the body. Example: Calcium in Bones. **Hence, going for a ratio of about 80 percent alkaline foods with 20 percent acidic foods is a good rule of thumb to follow**

Things to avoid (not stop) on a daily eating routine

In my regular practice, when patients come to me with their health problems like; most common being; Obesity, Hypothyroidism, Diabetes, Hypertension, Hyperlipidemia (High Cholesterol) and so on, I generally ask them to avoid or reduce the following below things in their daily routine:

1. Milk (can continue with Curd and Paneer)
2. Wheat & wheat products
3. Rice & rice products
4. Oil / Ghee / butter in any form
5. Reduce Dal and Non Veg food to twice a week (both included – also depending upon the age and exercise module) and
6. Processed foods

I would like to cover one topic in every article of mine why reduce these things & not consume on a daily basis.

In this article, I would like to discuss Milk and Present a case of 68 year old male, having diabetes since almost 25 years with other complications and how did alkaline diet help him in his health issues

Milk

If we look at the evolution of humans, milk is a strange food. Until 10,000 years ago humans didn't domesticate animals; hence milk was out of reach. Hence, majority of humans naturally stop producing significant amounts of lactase; the enzyme needed to digest lactose; somewhere between the age of two & five

Constituents of Milk

Biologically humans are mammals and mammal milks are all similar; the important differences are in specific proteins. Cow's milk contains water and about 3 to 4% of fat, 3.5% of protein, 5% of a natural sugar called lactose as well as various minerals and vitamins. Lactose gives milk its sweet taste and contributes approximately 40% of whole cow's milk's calories.

Production of Lactose Enzyme by Human body

Babies of age upto 4 months to 6 months survive on breast milk alone. In order to digest breast milk, they produce a large amount of enzyme lactase. When human babies are weaned off breast milk, the digestive system gradually adapts to other foods. The human body hence produces less lactase, and can therefore only break smaller amounts of lactose.

Process of Digestion

Lactose passes from the stomach into the small intestine where the enzyme lactase splits the sugar molecule into half resulting into one glucose and one galactose molecule. These single units of sugar molecules are absorbed from the intestine into the bloodstream to be used for energy.

The reduction of lactase activity after infancy is a genetically programmed event and it is perfectly natural. Hence, by drinking milk it is evident enough that we are not doing something that is as per nature's law and in accordance with our digestive system.

Every other species weans and then never drinks milk again for the rest of their lives, except Humans.

Lactose can definitely raise the blood glucose.
Because the split of lactose into glucose and galactose takes time, some nutritionists say lactose converts to blood glucose relatively slowly & hence has a low glycemic index.

Loren Cordain, PhD, of Colorado State Department of Health and Exercise Science says, that even though dairy may have a low Glycemic Index however it stimulates insulin as if it had a high Glycemic Index.

It is believed that this reaction may be because of the combination of lactose and some amino acids present in whey proteins.

Some authors like **Cordain, author of The Paleo Answer (December 2011)** are of the opinion that the insulin response to milk is "extreme,"

How is Milk protein linked to Type 1 diabetes?
There are four different types of casein proteins in Cow Milk, called alpha-S1, alpha-S2, beta, and kappa caseins. Other milk proteins are called "whey" proteins.

A1 beta-casein; which is a divergent form of beta-casein; has been suspected in causing Type 1 diabetes. In genetically vulnerable children, Scientists have found that A1 beta-casein is wholly different from that of human milk and can be extremely hard to digest for humans; hence may set off an immune response against the beta cells in pancreas

Although more research is needed, studies suggest that this A1 beta-casein along with bovine insulin present in cow's milk can trigger an autoimmune reaction. This autoimmune reaction causes the body to produce antibodies against the beta-cells – of pancreas which produce insulin, hence gradually destroying these cells and leading the way for type 1 diabetes

How is Milk protein linked to Type 2 diabetes?
Individuals who have Type 2 diabetes may report intolerance in the form of body's inability to process insulin

What happens to Lactose in milk when converted to Curd?
When pasteurized milk is heated to a temperature of 30-40 °C, or even at room temperature; a small amount of old curd added to it; the lactobacillus, a genus of bacteria; in that curd sample starts to grow, hence converting lactose into lactic acid by means of fermentation

How does Lactic Acid Help?
During laborious exercise, the amount of oxygen available to the muscles decreases. This stimulates the muscle cells to produce lactic acid as a source of fuel for the mitochondria. As the mitochondria exhaust the available supply of lactic acid, the muscles are able to work longer. **Lactate is formed from the breakdown of glucose.**

During this process; human cells make adenosine triphosphate, providing energy for most chemical reactions in the body. Lactate formation doesn't use oxygen, hence it is anaerobic metabolism. Lactate-related ATP production is small but very fast, making it ideal for satisfying energy needs anytime exercise intensity exceeds 50% of maximum capacity

Lactate is used rapidly as a fuel during exercise and recovery and does not remain in the muscles.

Consequently, we use more carbohydrates as fuel and produce more lactic acid because human body uses lactate as a biochemical "middleman" for metabolizing carbohydrates.

What is the glucose paradox?
- Digested Carbohydrates enter the circulation form intestines to the liver mainly in the form of glucose.
- However, instead of entering the liver as glucose & being converted directly to glycogen, most glucose from dietary carbohydrate bypasses the liver, enters the general circulation & reaches the muscles and converts into lactic acid.
- Lactic acid then goes back into the blood and travels back to the liver where it is used as building blocks for making liver glycogen.
- Human body produces much of its liver glycogen indirectly from lactate and not directly from blood glucose

Scientists call the process of obtaining liver glycogen from lactate the "Glucose Paradox", showing the importance of lactic acid in Carbohydrate Metabolism. This theory was formulated by the famous biochemist Dr. J.D. McGarry & his associates.

- The concentration of both glucose and lactate rise in the blood after a carbohydrate-rich meal
- The blood lactic acid concentration does not rise much because it is removed rapidly.
- Lactic acid acts like a carbohydrate "middleman" & hence helps one get rid of carbohydrates from the diet, without increasing insulin or stimulating fat synthesis.

Physiological reasons why lactate is important in Metabolic Regulation:
- Lactate - in contrast to glucose and other fuels - is smaller and better exchanged between tissues.
- It moves across cell membranes by a rapid process called facilitated transport.
- Lactate is made rapidly in large quantities in muscle and released into general circulation.
- Muscle cells with large glycogen reserves cannot release significant amounts of this potential energy source as glucose because muscle lacks a key enzyme Glucose -6-phosphatase (present mainly in Liver and Kidneys) required to produce free glucose to be released into the blood.

Lactic Acid in Brain metabolism
Since ages, glucose has been assumed to be the main source of energy for the living tissues. However, there are some indications that it could be lactate, and not glucose & in other words metabolized by neurons in the brain of several mammalian species. According to the lactate-shuttle hypothesis, glial cells are responsible for converting glucose into lactate, and for providing lactate to the neurons. Because of this local metabolic activity of glial cells, it was found in the microdialysis studies in contrast to plasma, lactate levels in brain ECF were threefold higher than glucose. Also the brain appears to be the site of Important Suggestive Anaerobic Glycolysis, raising the possibility that Glucose derived Lactate is an vital fuel for the brain

Few evidences suggests that lactate is also vital during early stages of development for brain metabolism in prenatal and early postnatal subjects, with lactate having higher concentrations in body liquids, and are appropriately put to use by the brain conversely over glucose

Composition of Paneer
Paneer contains all the milk constituents except for loss of some soluble whey proteins, lactose and minerals. Paneer has a fairly

- High level of fat (22–25%)
- Protein (16–18%) and
- A low level of lactose (2.0–2.7%)
- Paneer is of great value in Indian diet context, because it contains
- Fairly high level of fat and proteins as well calcium and phosphorus. .
- It is also a good source of fat soluble vitamins A and D.
- Exceptional nutritive value of paneer is because of presence of whey proteins; a rich source of essential amino acids.

Hence, keeping in view the above discussion, I generally recommend the patient to have curd freely, paneer once / twice in a week and avoid Milk as far as possible, except for if they want to consume it with tea

Methods / Research Methodolgy / Material / Case Presentation
Here, I present the case of a 68 year old male, suffering from Diabetes and other health problems since almost 25 years now

He came to me in July 2016, with the complaint of constant severe headache early in morning since 15 days with other lab reports as given below: (on case taking, he was asked to do the below reports and the findings were as follows:

- Reduced EGFR from 58.7 ml/ min /1.73sqm to 69 ml/ min /1.73sqm
- HBAC1 from 10.5% to 6.5%
- Mean blood glucose in mg% from 240.3 to 140
- Insulin Dosage: about 20 units to 8 units in the night

He visited his diabetologist, with the above reports and the doctor said, all these were normal with so many years of Diabetes and just changed a medicine here and there; however the patient had no relief in the symptoms. Then he approached me and was very anxious and asked me, how could I help him and in how much time.

I asked the patient to give me just 15 days of time and I assured him, that his headache would definitely disappear in 15 days, and once this happens, he can continue the diet for long and the target would be to get the HBAC1 report to below 7. He agreed Within 10 days, his headache disappeared and he was now happy and following the diet as prescribed to him, where in the following changes were recommended:
- Instead of Milk, he can have chaas / curd
- Instead of Wheat chappati, he can have a combination of Nachni & Besan Bhakri or Chila. Can have Wheat and rice once a week
- No Oil

- Consume more fruits and vegetables
- Since, he is a vegetarian, hence non veg was not an issue. Dal was reduced to only 2 meals a week out of the 14 meals (7 lunches and 7 dinners)

Research Results & Discussion

Over a period of 9 months, his HBAC1 report reduced to 6.5 in the year (2017). Today, he continues to maintain the same HBAC1 report and reducing his insulin dosage from 20 units to 8 units currently and the aim is to further get down the Insulin Units to half of current dosage by the end of this year

Literature Review & Conclusion

Hence, from the above discussion, especially related to Milk and Milk Products: its my experience that helps me to review the following points:

- Curd is better tolerated and easier to digest than Milk
- Paneer / Cottage Cheese is better tolerated & easier to digest than Milk
- Curd is easier to digest than Cottage Cheese / Paneer
- Calcium and Phosphorus content is same in Milk, Curd and Paneer

Hence, prescribing / recommending diabetes patients to consume more of Curd rather than milk would definitely help them in reducing their Blood Sugar level

Acknowledgement

Here, I am greatful to my patient, who has permitted me to use his reports for the benefit to show people how alkaline diet can improve HBAC1 report drastically and also reduce the insulin dosage over a period of time.

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