



MODERN PARAMETERS IN AYURVEDIC RESEARCH

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A. pH METER

pH meter corrects pH will be measured regardless of sample temperature. It is applicable to all kinds of solutions including those containing strong oxidizing and reducing agents. It is used for all biological fluids.

B. Animal House Experimentation

Animal research plays an integral role in scientific study relevant not only to furthering our basic understanding and knowledge, but also to informing clinical practice and public health policy. It is for this reason that psychologists need to become informed about the threats to research conducted with non-human animals. Both old and new discoveries from animal research continue to play key roles in advancing our understanding of Prakruti of the patients.

C. Importance of Blood Investigations in Ayurvedic Research

CBC - Complete Blood Count

A complete blood count (CBC) is a blood test used to evaluate overall health and detect a wide range of disorders, including Raktaja vikar.

A complete blood count test measures several components and features of rakta, including:

- Red blood cells, which carry oxygen
- White blood cells, which fight infection
- Hemoglobin, the oxygen-carrying protein in red blood cells
- Hematocrit, the proportion of red blood cells to the fluid component, or plasma, in your blood
- Platelets, which help with blood clotting

Abnormal increases or decreases in cell counts as revealed in a complete blood count may indicate that an underlying medical condition that calls for further evaluation.

A complete blood count is a common blood test that's done for a variety of reasons:

- To assess overall health. A complete blood count as part of a routine medical examination to monitor general health and to screen for a variety of raktaja vyadhi.
- To diagnose a medical condition. A complete blood count if you're experiencing weakness, fatigue, fever, inflammation, bruising or bleeding. A complete blood count may help diagnose the cause

of these signs and symptoms. It suspects you to have an infection; the test can also help confirm that diagnosis.

- To monitor a medical condition. If you've been diagnosed with a blood disorder that affects blood cell counts, such as thalassemia or polycythemia vera.

The correlation in Ayurveda here is that usually in pitta prakruti people the WBC are usually increased as he is more prone to infection and inflammation which is the natural tendency of the pitta which in turn will increase the white blood cell count indicative of infection. The investigation reports help us as tools in better treatment as we do not fully depend on the reports which supports. In modern aspect the usual treatment for Hb, platelet deficiency is supposed to be supplements or blood transfusion. But in Ayurveda we have different line of treatment and various medications based on the deficiency according to the prakruti of the person, disease, etc.

CT and BT - Clotting Time and Bleeding Time

The expected range for clotting time is 4-10 minutes. This test measures the time taken for blood vessel constriction and platelet plug formation to occur. No clot is allowed to form, so that the arrest of bleeding depends exclusively on blood vessel constriction and platelet action.

The CT/BT helps in the raktamokshana (it means letting out the impure blood from the body or the wounded site or for therapeutic aspect) like leech therapy or siravedha as well as to know if the blood needs to be purified.

BSL - Blood Sugar Level

Normally, blood glucose levels increase slightly after you eat. This increase causes your pancreas to release insulin so that your blood glucose levels do not get too high. Blood glucose levels that remain high over time can damage your eyes, kidneys, nerves, and blood vessels.

There are several different types of blood glucose tests.

- Fasting blood sugar (FBS) measures blood glucose after you have not eaten for at least 8 hours. It is often the first test done to check for prediabetes and diabetes.
- 2-hour postprandial blood sugar measures blood glucose exactly 2 hours after you start eating a meal. This is not a test used to diagnose diabetes.
- Random blood sugar (RBS) measures blood glucose regardless of when you last ate. Several random measurements may be taken throughout the day. Random testing is useful because glucose levels in healthy people do not vary widely throughout the day. Blood glucose levels that vary widely may mean a problem. This test is also called a casual blood glucose test. Random testing is not used to diagnose diabetes.
- Oral glucose tolerance test is used to diagnose prediabetes and diabetes. An oral glucose tolerance test is a series of blood glucose measurements taken after you drink a sweet liquid that contains glucose. This test is commonly used to diagnose diabetes that occurs during pregnancy (gestational diabetes).

According to modern aspect there is type 1 and 2 DM but according to Ayurveda there are 20 types of diabetes which have different mode of treatments. In modern aspect the diabetes is being treated with tablets, insulin injections etc and the complications or the side effects caused by diabetes is being treated symptomatically but where as in Ayurveda we concentrate more on the type of diabetes and prakruti and then treat it from the root itself.

TC - Total Cholesterol

Directly linked to risk of heart and blood vessel disease, goal values are;

- 75-169 mg/dL for those age 20 and younger
- 100-199 mg/dL for those over age 21

Too much cholesterol leads to coronary artery disease. Blood cholesterol level is related to the foods you eat or to genetic conditions (passed down from other generations of family members).

High Density Lipoprotein (HDL) "Good cholesterol" High levels linked to a reduced risk of heart and blood vessel disease. The higher HDL level, the better.

Goal values are: Greater than 40 mg/dL

HDL is a lipoprotein (a combination of fat and protein) found in the blood. It is called "good" cholesterol because it removes excess cholesterol from the blood and takes it to the liver. A high HDL level is related to lower risk of heart and blood vessel disease.

Low Density Lipoprotein (LDL) "Bad cholesterol"

High levels are linked to an increased risk of heart and blood vessel disease, including coronary artery disease, heart attack and death. Reducing LDL levels is a major treatment target for cholesterol-lowering medications.

Goal values

- Less than 70 mg/dL for those with heart or blood vessel disease and for other patients at very high risk of hriday vikara (those with metabolic syndrome)
- Less than 100 mg/dL for high risk patients (e.g., some patients who have multiple hriday vikara)
- Less than 130 mg/dL for individuals who are at low risk for coronary artery disease

LDL is a lipoprotein (a combination of fat and protein) found in the blood. It is called "bad" cholesterol because it picks up cholesterol from the blood and takes it to the cells. A high LDL level is related to a higher risk of heart and blood vessel disease.

LFT - Liver Function Test

According to Ayurveda this test will help to give medication to all the types of liver disorders, again in Ayurveda the concept is more prakruti oriented for both the patient and disease. The usual blood test which checks that the kidneys are working properly measures the level of urea, creatinine, and certain dissolved salts. In kidney we have again innumerable disorders according to Ayurveda in which the tests will act as helping hand.

The above said test levels will help in better diagnosis of the disease in Ayurveda as many of the disease in modern aspect are clubbed into one category because of the raised levels of the above said tests but where as in Ayurveda this will be a substantial proof in definite diagnosing the disease accurately and thus by ensuring the proper authentic treatment.

Apart from these there are other tests which will be helping us in giving better service and help to people by enhancing their life in a better way and proving

protecting the health of the healthy and destroying the disease from the diseased.

DISCUSSION AND CONCLUSION

The research in Ayurveda should be categorized into two aspects. One is to improve the science, and the demand for this should come from the Ayurvedic community. The second aspect of Ayurvedic research is due to present day compulsions, and under this would come studies such as quality control of the drugs, clinical trials, documentation, studies on metallic preparations and toxicity studies of these drugs.

Looking at the question of quality control of Ayurvedic drugs, while this is very important, one has to very carefully look at how to carry it out and extreme care should be taken to select the experimental and clinical models. The parameters chosen for evaluation should reflect the essence of Ayurveda. For example, there are a number of functional parameters in Ayurveda, such as Deepan, Pachan etc. used to understand the pharmacological action of Ayurvedic drugs. It would therefore be more appropriate to use these in evaluating the quality of Ayurvedic drugs that are prepared according to Ayurvedic principles and methods. These methods are very different to how allopathic medicines are prepared. It is very important, therefore, to use the right methods and parameters to arrive at fruitful results. The challenge lies in choosing the appropriate experimental and clinical models and addressing the right questions. Great ingenuity would be required in the design of these studies, and if done properly, the results could be very rewarding.