1. INTRODUCTION
Diet is simply that we eat. There are two aspects of diet; the type and quantity of food that one eats. Maintaining a balance between the two factors is essential for a good and standard health. Diet taken in the form of a variety of right food but in quantities that are too large would yield a large amount of calories and thus have an adverse affect on human body. On the other hand, food with right calories from only one group will lack essential nutrients and would cause serious health problems.

The source of diet may be either plants and/or animals. Plant based diets include fruits, vegetables, whole grains where as animal derived diets are meats, poultry, fish, egg, ghee etc.

Diets provide the essential nutrients required for deriving energy for various metabolic activities and building up the body parts. Nutrition is an important factor in the promotion and maintenance of good health through the entire life course of a person. Their role as determinants of chronic non-communicable diseases are well established and they therefore occupy a prominent position in prevention activities (WHO, 2002). For this a diet should provide adequate amount of all the nutrients. To avoid the deficiency of various nutrients, intake of balanced diet is inevitable for human beings. A balanced diet may be defined as one which contains the various groups of food stuff such as energy yielding, body building and protective food in correct proportion. Lack of balanced diet, over diet as well as under nutrition may lead to the occurrence of several diseases such as obesity, diabetes, cardiovascular diseases, anemia, hypertension and under weight problems. The components of a balanced diet differ according to age, sex, physical activity, economical status and the psychological state of the individuals (Swaminathan, 2003). The proportion of components also differs in persons suffering from specific
diseases and leads to alteration of numerous physical and biochemical parameters. The levels of these parameters play a significant role in reducing the risk factors associated with the disease.

Quite a large number of changes are noticed in persons suffering from various diseases. These include physical, psychological and biochemical changes. Each disease is characterized by specific alteration of any or all of these parameters. Thus the level of these parameters could act as indicators of the severity of a particular disease. The increased level of blood glucose and urine sugar, triglyceride, lipase, free fatty acid, albumin-creatinine ratio, lactate dehydrogenase (LDH) and homocysteine as well as decreased high density lipoprotein cholesterol and antioxidantive bilirubin in diabetes mellitus (DM) patients should be cautious and considered as risks for increasing DM complications. Similarly homocysteine might be associated with longer diabetic duration and micro vascular complication of retinopathy in diabetes (Huang et al., 2006).

The Body Mass Index (BMI) measured as weight in Kg/height in m² is an internationally used measure of obesity. The BMI limit less than 18.5 is considered as underweight; 18.5-24.9 is normal; 25.0-29.9 is overweight and more than 30 as obese. Level of thyroid hormone (T3, T4 and TSH), blood glucose level, lipid profile etc. are some of the parameters which are clinically significant for obese patients. The level of liver enzymes in diagnosis and during the follow up of obese patients has also been studied (Saviano et al., 1997).

Cancer patients are generally advised for various tests by oncologists for clinical analysis and diagnosis. Some of these include liver function test (LFT), renal function test (RFT), electrolytes and protein composition and LDH etc. In addition to these, specific enzymatic tests are also carried out in different categories of patients such as oral cancer, breast
cancer, prostrate cancer, ovary cancer, lung cancer etc. Proper analysis of these parameters is useful to find out the associated risk factors.

Measurement of blood pressure (BP) and lipid profile are very common clinical tests in persons suffering from hypertension. Blood pressure of 140/90 mm Hg or above is considered high and increases the risk of developing cardiac disease, renal diseases, hardening of arteries and brain stroke etc.

Anemia is a condition in which there is a decrease in number of red blood corpuscles (RBCs) or less than the normal quantity of Haemoglobin in the blood. People with anemia report feelings of weakness, or fatigue, general malaise, and sometimes poor concentration. Anemia is diagnosed through counting the number red blood cells and the Haemoglobin level. Anemic patients are characterized by a marked reduction of Haemoglobin (5-7g per cent) from the normal levels of 11-13g per cent.

Diet plays an important role in the prevention and control of various non communicable chronic diseases. Dieticians recommend balanced diet to patients according to the diseases they suffer from. For a diabetic patient required calories (as per the BMI of the patient) consisting of high protein, moderate carbohydrate, low fat, vitamin and mineral rich diet are suggested. Likewise, the suitable diet for obese patient consists of low fat, normal required protein, moderate carbohydrate and is fiber rich. Cancer patients are recommended for foods comprising high protein, low fat, moderate carbohydrate, antioxidant and fiber rich diet. A similar type of diet as that of diabetic patients with low salt is considered as the standard diet for persons with hypertension. The diet for anemic patients usually consists of normal fat, high protein, iron and fiber rich food.
Balanced diet as mentioned above may control the diseases in a variety of ways the mechanism(s) of which are not well understood. The role of diet specially designed for the patients might have effect on the various parameters of the body. However, these alterations depend on the time (Short term and Long term), sex, and the type of diseases.

**Objective of the proposed research work**

The objectives of the present study are:

i. Determination of the effect of balanced diet on various physical parameters such as height, weight and blood pressure etc. of diabetes, obese, cancer, hypertension and anemic patients.

ii. To measure and analyze the changes in biochemical parameters of these patients under the influence of balanced diet in a time and dose dependent manner.

iii. To design planned balanced diet for the patients to prevent them from other related diseases.

iv. An overall comparison of the degree of change of common parameters in the patients recommended for same type of diet.