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Impact of Fenugreek on Blood Pressure

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ABSTRACT:

INTRODUCTION:
Fenugreek scientific name is *Trigonellafoenum*graceum.It is a legume and has been used as a spice throughout the world to enhance the sensory quality of foods. It is known for its medicinal qualities such as antidiabetic,anticarcinogenic,hypocholesterolemic,antioxidant,and immunological activities. The aim of this study is to find out the impact of fenugreek on blood pressure and compare blood pressure among consumers and non-consumers of fenugreek.

MATERIALS AND METHOD:60 subjects of age group between 20-50 were taken and they were divided into two groups. One group is the controlled group and the other is the treatment group. Fenugreek was given to the people with a significantly higher blood pressure and the readings were taken in a regular interval. Fenugreek is taken through oral administration and in a pre-prandial state.

RESULTS: By the conducted studies we can conclude that fenugreek causes a significant decrease in the systolic blood pressure. The other benefits of fenugreek are that it cures digestive problems such as loss of appetite, constipation and improves hair health.

Key Words: Fenugreek, BloodPressure, Food Habits, Cholesterol, Diabetes.

INTRODUCTION:

Fenugreek is a spice that has been used throughout the world. It is a legume and besides its medicinal qualities it is also used as a part of various food product development such as food stabiliser, adhesive, an emulsifying agent. Fenugreek has 3 oblong leaves and is an annual herbaceous plant. This plant has been used to ease childbirth, to Aid digestion, and as a general tonic to improve metabolisms.Trigonelline which is the major constituent is considered as the most important metabolite of fenugreek which is very effective in treating diabetes and decreasing blood cholesterol. Diaszhenin is another important compound in seeds of this plant which is used in producing medicinal steroids like contraceptive pills.Bioactive lipids like Triacylglycerol and phosphatidylethanolamine were the major molecular species identified in neutral and polar lipid fraction (1).Consumption of fenugreek induced some side effects like Testicular Toxicity,Antifertility effects.In male it is associated with oxidative stress and D.N.A damage (2).The effect of fenugreek on a fat index of diabetic patients with high cholesterol showed that fenugreek reduces the fat significantly. Fenugreek does seem to have positive effects on body composition in combination with resistance training by decreasing body fat percentage. Also its consumption can actually increase estrogen levels (3).
Fenugreek contains animal growth promoting substances that is not present in other forage legumes and so has the potential to reduce the use of artificial growth promoters (4) .Allergic reactions like wheezing, facial angioedema,rhinorrhea,fainting are associated with the administration of fenugreek extract (5).Antiglycemic effects have been linked to delay gastric emptying caused by the fibre content. Fenugreek administration has not been reported to cause any toxicological effects (6).The purified fenugreek gum was proven to reduce surface tension to a lower value than guar gum (7).

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Fenugreek is well known for its gum,fibre,alkaloids,flavonoids,saponin and volatile contents.More than 65% of dietary fibre due to its high fibre content (8).
Consumption of fenugreek significantly resulted in decrease in LDL,VLDL Cholesterol and triglyceride levels (9).The fenugreek consumption was also found to be safe in patients with type-2 diabetes,fenugreek seed extract was also used as furostanolicsaponins.Menopause a natural phenomenon is defined by the fall of ovarian hormones mainly estrogen causing major problems such as insulin resistance.Fenugreek is known to have some useful properties such as insulin sensitising effect (10).The literacy of an individual mediated the relationship between ducat and hypertension.Knowledge literacy was a significant independent predictor of blood pressure control,but only minimally explained the relationship between education and blood pressure.Cardiovascular diseases have assumed alarming proportions globally primarily due to lifestyle changes, changing food habits (11).Food plays an important role in the regulating bodily functions and more so the cardiovascular functions.The exact causes of high blood pressure are not known, but several things may play a role,including Smoking,Being overweight or obese,Lack of physical activity,Too much salt in the diet,Stress,Older age,Family history of high blood pressure,Chronic kidney disease etc(12).

MATERIALS AND METHOD:

Sphygmomanometer is used for measuring blood pressure. 60 subjects of age group between 20-50 were taken and they were divided into two groups one group is the controlled group and the other is the treatment group.Fenugreek is taken by mouth (oral administration) and is taken before food (pre-prandial).60 subjects were first asked to take deep breaths so as to relax and then their blood pressure was measured using a sphygmomanometer and recorded. Then 30 members were then asked to take fenugreek before food in an empty stomach for a month and then the blood pressure was measured and recorded again.The treatment group who received seeds of fenugreek (sprouted) for 15 consecutive days had decreased both systolic and diastolic blood pressure.In this study the independent variable is blood pressure and the dependent variable is effect of fenugreek seeds.Sampling method used is randomised control trial under sampling size was hundred numbers statistics used was analysis of variables(ANOVA).

RESULTS AND DISCUSSION:

Fenugreek may help regulate cholesterol levels and improves blood pressure which can reduce the risk of developing heart conditions. This may be because fenugreek seeds contain roughly 48 percent dietary fibre.It also forms a viscous gel in the intestines that makes it harder to digests sugars and fats. Dietaryfiber is hard to digest.

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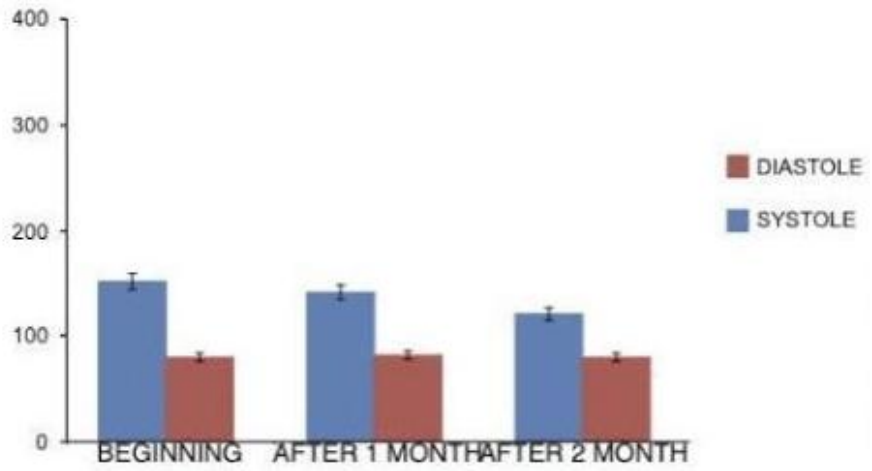

Figure 1: The above graph shows the correlation between age group of 20-30 years and the mean value of blood pressure.Bluecolour represents Systolic pressure (Upper value) and Red colour represents diastolic pressure (Lower value).We can interpret that there is a significant decrease in the mean value of systolic pressure after consumption of fenugreek seeds through oral administration pre-prandially.

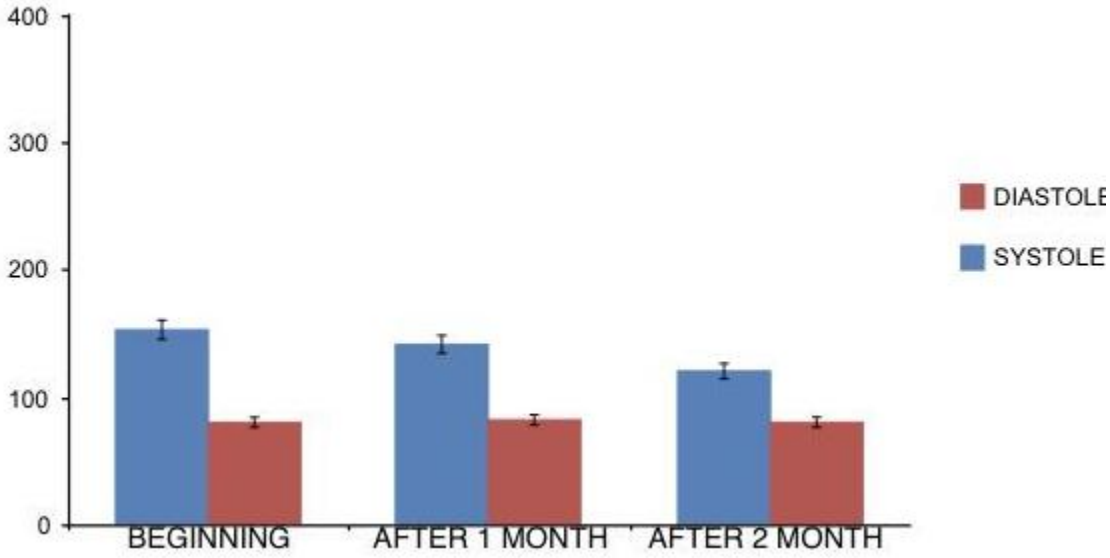

Figure 2: The above graph shows the correlation between age group of 30-40 years and the mean value of blood pressure.Bluecolour represents Systolic pressure (Upper value) and Red colour represents diastolic pressure (Lower value).We can interpret that there is a significant decrease in the mean value of systolic pressure after consumption of fenugreek seeds through oral administration pre-prandially.

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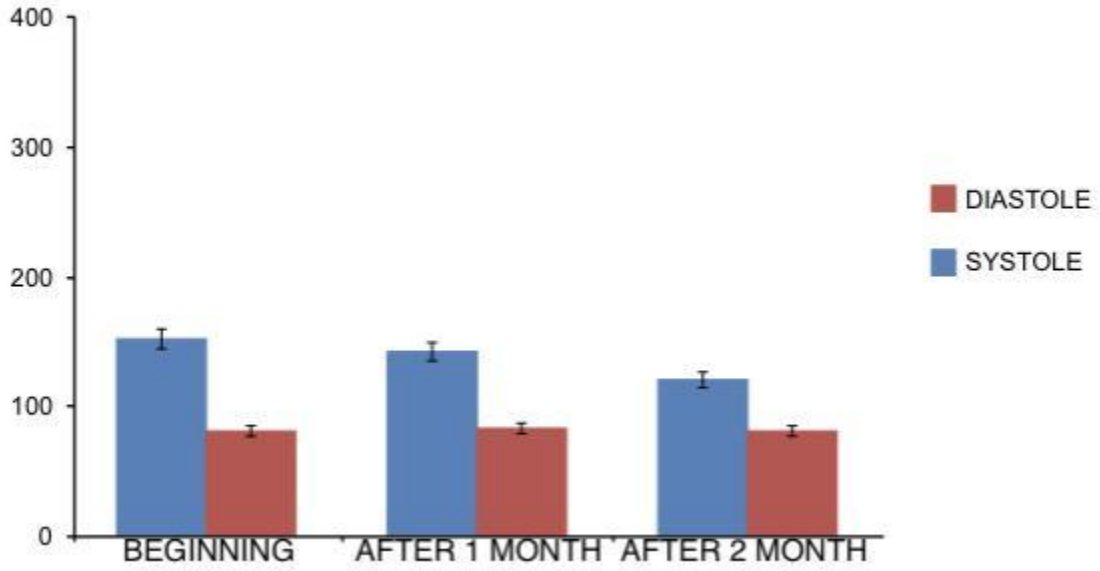

Figure 3: The above graph shows the correlation between age group of 40-50 years and the mean value of blood pressure.Bluecolour represents Systolic pressure (Upper value) and Red colour represents diastolic pressure (Lower value).We can interpret that there is a significant decrease in the mean value of systolic pressure after consumption of fenugreek seeds through oral administration pre-prandially.

By the concluded studies we can say that fenugreek causes a significant decrease in systolic blood pressure.The other benefits of fenugreek is that it cures digestive problems such as loss of appetite,stomach upset,constipation,it improves hair health,treat diabetes,reduce cholesterol and heart diseases,increase milk production,helps in prevention and treatment of cancer,improves skin health and helps in weight loss. The presence of dietary fibre in the fenugreek contributes to various physiological effects produced by the herb.In nicolarmucci,the hypertension is a long term medical condition characterised by persistently elevated B.P in atrial vessels in many people and fenugreek causes a significant reduction in blood pressure as it has antioxidant and hypocholesterolemic activities.Systolic blood pressure (the first number) as a major risk factor for cardiovascular disease for people over 50. In most people, systolic blood pressure rises steadily with age due to the increasing stiffness of large arteries, long-term buildup of plaque and an increased incidence of cardiac and vascular disease.However, either an elevated systolic or an elevated diastolic blood pressure reading may be used to make a diagnosis of high blood pressure.According to recent studies, the risk of death from ischemic heart disease and stroke doubles with every 20 mm Hg systolic or 10 mm Hg diastolic increase among people from age 40 to 89 (13).The main factors influencing the results are the “STROKE VOLUME” which is defined as the amount of blood pumped by the left ventricle of the heart in one contraction.Cardiac output equals heart rate multiplied by the stroke volume.The other one is” PERIPHERAL RESISTANCE” which is also known as vascular resistance.It is the resistance that must be overcome to push blood through the circulatory system and creates flow.The last one is the “VENOUS RETURN” which is defined as the flow of blood back to the heart.Under steady-state Condition venous return must equal cardiac output when averaged over time because

the cardiovascular system is essentially a closed loop.The limitations of this study is that it involves South Indian population only and the age group is between 20 to 50 years.

CONCLUSION:

From the concluded study It is known that consumption of fenugreek seeds through oral administration pre-prandially causes a significant decrease in systolic blood pressure and also reduces the sugar level in the blood,that is hypoglycemic in nature.About 72% of the population individuals are not aware of the effect of fenugreek on blood pressure and now they understand that fenugreek seeds have a wide range of medicinal activities not only regulates blood pressure but also blood glucose level.The lacunae of this study is the functional food rich in protein and fibres and less in calorific value can help in reducing reactive oxygen species and risks of cardiovascular disease and improves quality of life.

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CONFLICT OF INTEREST:
No conflict of interest indeed.

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