

A Study to Assess the Effectiveness of Fenugreek Seed in Reducing Blood Pressure Among the Adults with Hypertension Residing in Selected Areas of Mahabaleshwar Taluka

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Abstract: Hypertension (HTN or HT), also known as high blood pressure (HBP), is a long-term medical condition in which the blood pressure in the arteries are persistently elevated. (1) In Maharashtra, the overall prevalence of hypertension is pegged at 25% (2018), while a huge variation is found across the districts. The prevalence of high blood pressure is higher among the elderly (40%), among males (28%) and in the urban areas (27%). (8) Fenugreek lowers blood pressure because of its high potassium and fiber content. Fenugreek seeds and leaves are loaded with high amount of soluble fibre which aids in decreasing the cholesterol levels. (4) The aim of this study was to assess the effectiveness of fenugreek seeds in reducing blood pressure. A Quasi-experimental research study was conducted on twenty-nine adults, identified by using a purposive sampling technique. A self-prepared structured questionnaire was used as the research tool. A pre-test was carried out on day 1 and blood pressure was measured using 'Aneroid Sphygmomanometer'. Five grams of fenugreek seeds soaked overnight in 15–20 ml of water was administered in the morning and evening for two weeks. A post-test was conducted by measuring the blood pressure on day 7 and 15 of the experiment. The findings showed that the fenugreek seeds were effective in significantly reducing the systolic and diastolic blood pressure among the selected hypertensive adults. The results of the study establish that consumption of fenugreek seeds is a non-pharmacological, safe and cost-effective method to reduce hypertension.

Keywords: Blood pressure, effectiveness, fenugreek seeds, hypertension.

1. Introduction

Hypertension (HTN or HT), also known as high blood pressure (HBP), is a long-term medical condition in which the blood pressure in the arteries are persistently elevated [1].

Globally, an estimated 26% of the world's population (972 million people) are hypertensive, and the prevalence is expected to increase to 29% by 2025, driven largely by the increase in economic development [2] and stress levels.

Hypertension acts as a primary contributor to heart disease

and stroke, the leading cause of death worldwide. Long-term high blood pressure, however, is a major risk factor for coronary artery disease, heart failure, atrial fibrillation, peripheral arterial disease, vision loss, chronic kidney disease, and dementia [4].

During the COVID-19 pandemic a large number of people resorted to home remedies for varied minor health issues, thereby reducing the burden on their pockets. Spices are valuable domestic items used since time immemorial and are currently used for their medicinal properties. Fenugreek seeds are being used as revitaliser of health in many diseases. [3] Being a natural product Fenugreek has a number of therapeutic effects with almost no side effects. As Fenugreek seeds and leaves are loaded with high amount of soluble fibres they aid in decreasing cholesterol levels which indirectly decreases blood pressure and the risk of heart disease [4].

2. Background of the Study

Fenugreek is also known as, "Trigonella Foenumgraecum" and is cuboid in shape and yellowish amber color. Fenugreek ('Methi' in Marathi) is a herb in the family of soy. People use its fresh and dried seeds, leaves, twigs, and roots as a spice, flavoring agent, and as a supplement. While further research is necessary, some studies show that fenugreek may have varied health benefits [5]. The WHO -ISH guidelines classify optimal blood pressure as less than 120/80 mmHg, while normal blood pressure is classed as less than 130/85 mmHg. Raised blood pressure is one of the leading risk factors for global mortality [6] and morbidity such as coronary heart disease and ischemia as well as hemorrhagic strokes.

3. Objective of the Study

To assess the effectiveness of fenugreek seeds in reducing blood pressure.

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4. Hypothesis

H_0 : There will be no significant reduction in blood pressure after consuming fenugreek seed among adults with hypertension in selected areas of Mahabaleshwar Taluka.

H_1 : There will be a significant reduction in blood pressure after consuming fenugreek seed among adults with hypertension in selected areas of Mahabaleshwar Taluka.

5. Methodology

A quantitative approach with a quasi-experimental design was used to assess the effectiveness of fenugreek seeds in reducing blood pressure among the adults with hypertension. The study was conducted in a selected area of Mahabaleshwar Taluka. Adults diagnosed with hypertension, between the age group of 45-85 years with blood pressure reading above 130/90 mm of Hg, were included in the study. Adults diagnosed with blood pressure along with hypoglycaemia or already on traditional remedies or allergic to fenugreek or with comorbidities or were hypertensive and on medication but have controlled blood pressure were excluded from the study. 29 adults who fulfilled the criteria were selected for the study using a purposive sampling technique.

A structured questionnaire encompassing three sections: Section A (comprising of demographic variables), Section B (comprising of personal history, medical history and blood pressure readings on day 1 of the experiment) and Section C (comprising of blood pressure readings on day 7 and 15 of the experiment) was used as the research tool. The blood pressure readings were measured using "Aneroid Sphygmomanometer" for all the adults. The content of the tool was reviewed and refined by a group of subject matter experts.

A survey was conducted in the identified area and the adults who fulfilled the criteria were selected for the study. Initial assessment was carried out and information collected using the research tool, pre-test was conducted by measuring blood pressure on day 1 of the experiment. Five grams of fenugreek seeds soaked overnight in 15–20 ml of water were administered in the morning and evening for two weeks. Post-test was carried out by measuring blood pressure on day 7 and 15 of the experiment.

Approval for the study was obtained from the Ethical Committee and the Head of the Institution. Consent was obtained from each study participant after providing full information about the study. Anonymity was assured to each participant and maintained by the researchers.

6. Results

Out of 29 patients majority of them were in the age group 76-85 years, gender wise evenly split with a slight tilt in favour of females (55.172%) and 100% of the samples were on antihypertensive drugs.

On measuring blood pressure during initial assessment 100% of the sample had blood pressure more than 130/90 mm of Hg. The mean values calculated for systolic and diastolic blood pressure on day 1 was 160.345 and 95.172, on day 7 was 140.34 and 86.897, and on day 15 was 130.7692 and 79.23077

respectively.

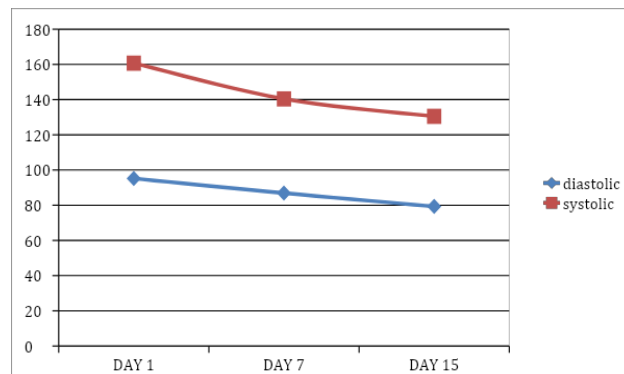


Fig. 1. Line graph representing mean of blood pressure level

7. Discussion

The present study evaluated the effectiveness of fenugreek seeds in reducing blood pressure among the adults with hypertension. Majority (58.62%) of the adults were in the age group 76-85 years. Thus, while the results are optimistic the effectiveness of fenugreek seeds at the lower age groups that are susceptible to the vagaries of life are not established, given the composition of the group.

However, use of alternative medicines such as administration of fenugreek seeds for reducing blood pressure has been studied rarely. On post-test assessment a significant reduction in the blood pressure was noted across the sample and consistent reduction on day 7 and day 15 points to direct correlation between consumption of fenugreek seeds and the reduced blood pressure. The above findings indicate that fenugreek seeds are effective in lowering blood pressure notwithstanding the age composition.

The study cannot be compared with any previous research as similar studies done on human are not reported till date. This perhaps is a potent area for further in-depth studies to generalise the findings to a larger segment of patients with high BP across wider age groups.

8. Conclusion

Consumption of Fenugreek seeds is a simple therapeutic modality which can be carried out by the patients themselves in their respective homes. It is cost effective and hence does not become a burden on their pockets. As there is a significant reduction in blood pressure among individuals who have participated in the study, administration of Fenugreek can be incorporated as one of the treatment methods to reduce BP as a complementary method. Since this is a non-pharmacological complementary treatment, it may be recommended to hypertensive patients and can be administered by nurses without any doctor's prescription.

Acknowledgement

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References

- [1] Wikipedia the free encyclopedia. Hypertension. Available from: <https://en.wikipedia.org/wiki/Hypertension>
- [2] World Health Organization (WHO). Hypertension. Available from: https://www.who.int/health-topics/hypertension/#tab=tab_1
- [3] McCormick Science Institute. History of spices. Available from: <https://www.mccormickscienceinstitute.com/resources/history-of-spices>
- [4] And Precision. 6 Foods that lower blood pressure. Available from: <https://andprecision.com/6-foods-that-lower-blood-pressure>
- [5] Vikaspedia. Nutritive value of foods. Available from: <http://vikaspedia.in/health/nutrition/nutritive-value-of-foods/fenugreek-reduces-blood-sugar-and-cholesterol>
- [6] Doctor NDTV. 10 Amazing home remedies for reducing blood pressure. Available from: <http://doctor.ndtv.com/living-healthy/world-hypertension-day-2017-10-amazinghome-remedies-for-high-blood-pressure-1698018>