Rakta can be determined by the quantity and quality of under the purview of node. The involvement of these chemical ions can be taken BP can be taken under domain of and arteries where is no active push by heart. Thus diastolic flowing through the narrow structures of the chambers of heart of blood pressure are controlled by circulation of electrical impulses generates by SA Node which may relate as blood pressure. Heart contracts during systole by the the two component of blood pressure Systolic and diastolic pressure exerted by the flow of blood on the walls of arteries. The entire hypothesis of management based on of hypertension. The increased blood pressure in the arteries depends upon a persons age, sex, physical and mental activities, family history and diet etc. Primary or essential hypertension is the world’s leading risk factor for global disease burden, is expected to cause more than half of the estimated 17 million deaths per year resulting from cardiovascular disease worldwide. Some traditional herbs used by north east people shows satisfactory result in treatment of various life threatening disease. Clerodendrum glandulosum Lindl. is one of those traditional herbs used as vegetables by more then 20 tribes of north east region and they claim that low incidence of hypertension due to regular intake of this herb. A clinical study was conducted among 86 cases of uncomplicated mild to moderate hypertension were randomly selected from OPD and IPD of Kayakchikitsa Deptt, Govt. Ayurvedic College & Hospital Guwahati-14, Assam. The data shows significant improvement on management of essential hypertension and no complications were found during and after the clinical study.

ABSTRACT
Essential Hypertension is a chronic and often asymptomatic clinical condition in which systemic arterial blood pressure elevated beyond normal. The increased blood pressure in the arteries depends upon a risk factor for cardiovascular disease is well recognised by every branch of medical pathies ,untreated hypertension is not only a significant risk factor for the development of cardiovascular morbidity and mortality, but it is also risk factor for renal failure, stroke, blindness and sudden death. According to 2018 guideline of European Society of Cardiology and the European Society of Hypertension is defined as office SBP values >140 mm of Hg and DBP values >90 mm of Hg. Based on office BP, the global prevalence was estimated to be 1.13 billion in 2015.1

Hypertension without specific symptoms in its mild and moderate stages cannot be considered as a disease in ayurveda. Ayurveda has clearly described about physiology of blood pressure and the hypertension can be easily understood by assessing dosa-dusbya involvement that has clearly mentioned in Ayurvedic text. The blood first ejected out of the heart, is then distributed to all parts of the body and thereafter return back to the heart through the blood vessels is termed as Sirah. It is known, blood pressure is the lateral pressure exerted by the flow of blood on the walls of arteries. The two component of blood pressure Systolic and diastolic blood pressure. Heart contracts during systole by the electrical impulses generates by SA Node which may relate as function of Vyana Vata. Vyana vata is also responsible for circulation of Rasa-Rakta. Heart rate and the nervous control of blood pressure are controlled by Pranavata. Again the diastole is attained when heart muscles relax and blood flowing through the narrow structures of the chambers of heart and arteries where is no active push by heart. Thus diastolic BP can be taken under domain of Kaphadosa (mainly Avalambak kapha). The auto-rhythmicity of the heart is due to the action potential created by the rapid influx of Na⁺ and Ca²⁺ ions and efflux of K⁺ ions across the membrane of the SA node. The involvement of chemical ions can be taken under the purview of Pitta. The blood volume and viscosity can be determined by the quantity and quality of Rasa and Rakta. The heart itself considered as the site for Para oja and Sadhak pitta also mulasthana of rasavahi dhamani. Thus the Dosas, Dhatus, Srotas, oja involved in the regulation blood pressure, abnormality of any of them along with pathological condition like ama and avarana may leads to hypertension.

In last 3 decades, a lot of concerted efforts have been channelled into researching the local plants with anti-hypertensive therapeutic values. About 75-80% of world population use herbal medicines because of their better acceptability with human body and lesser side effects. The north east India is full of natural resource specially in medicinal and aromaticplants which are extensively used by the traditional user from time immemorial. Clerodendrum grandulosum Lindl. Is one of those traditional herbs used as vegetables by more then 20 tribes of north east region and they claim that low incidence of hypertension and obesity due to regular intake of this herb. After assessing the present condition of anti-hypertensive drug the present work is taken for the study of Clerodendrum glandulosum Lindl in the management of mild to moderate cases of Essential hypertension. The entire hypothesis of management based on a traditionally used potent antihypertensive herb.

AIM & OBJECTIVE
1. To assess the efficacy of Clerodendrum glandulosum Lindl in the management of mild to moderate cases of Essential Hypertension.
2. To find out an effective, low cost and safe remedy to resist the Essential Hypertension.

MATERIALS AND METHODS
The study comprised of 86 patients of Hypertension were registered in OPD & IPD of Kayakchikitsa Deptt, Government Ayurvedic College & Hospital Guwahati-14.

Ethical clearance – There is research has been approved by the Institutional Ethical committee. Written consent was taken from all the patients before the trial and study was in accordance with ICH GCP Guidelines.

IEC/17/20-159 Dated 9/5/17

Selection of sample – Randomized Sampling

Type of study – Single blind

Duration of study – 60 days
Patients of severe malignant hypertension (SBP>180mm Hg)

Exclusion criteria
1. Patients refusal to participate in the study.
2. Patients having mild to moderate hypertension without complication.
3. Systolic blood pressure 140-180mm of Hg and diastolic blood pressure measurement.

Inclusion criteria
1. Patient in between the age group 20-80 years irrespective of sex.
2. Patients having mild to moderate hypertension without complication.
3. Systolic blood pressure 140-180mm of Hg and diastolic blood pressure 90-110mm Hg on at least three office measurement.

Study design:
The clinical study was comprises 100 subjects of uncomplicated mild to moderate hypertension were randomly selected from OPD and IPD of Kayachikitsa Deptt. Govt. Ayurvedic College & Hospital Guwahati-14 Assam. Some of these patients were known case of hypertension while some were diagnosed for first time when they come with other complaints. At the onset their clinical case history was recorded on special proforma with special reference to their systolic and diastolic blood pressure measurement, diet habits, family history of hypertension, socio-economic status, addiction, occupation, drug history and physical examination. They were subjected to routine examination of blood and urine.

Pre-treatment observation:
After taking consent of the patient the study was carried out along with the registration and necessary information. After preliminary registration diagnostic medical history was taken according to both Ayurvedic and modern clinical methods.

Selection of Drug and Dose – Dried powder of Clerodendrum glandulosum Lindl. 1gm b.d. with lukewarm water morning and evening after light meal.

Description of ClerodendrumcolebrookiannumWalp. – Clerodendrum glandulosum Lindl belongs to the family Verbenaceae. Globally the species is distributed in Bangladesh, Bhutan, China, India, Indonesia, Malaysia, Myanmar, Nepal, Sri Lanka and vietnam. In India, the species is distributed in Assam, Meghalaya, Arunachal Pradesh and Sikkim at attitudes between 1 to 4000 ft a.s.l. The plant grows generally moist and waste places. It is a perennial evergreen shrub and grows up to 1.5-3 m in height. Out of 23 species of Clerodendrum reported from India, Arunachal Pradesh has accounted 16 species and one variety. It has been reported that the species is distributed from 500-800 m asl in Lower Subansiri, Papum Pare, and Upper Siang districts of Arunachal Pradesh. Many species of genous Clerodendrum occurring in north eastern region have been reported to be useful in treatment of various ailments and diseases.

Fresh leaves of nefafu were collected from the village of North lakkhipur district, Assam. The leaves were identified in Dept. of Botany, Gauhati University. The collected leaves were washed thoroughly and then shade dried, powdered and the dried leaves powder was stored in an air tight container for future use.

Clerodendrum glandulosum Lindl

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1. Patient in between the age group 20-80 years irrespective of sex.
2. Patients having mild to moderate hypertension without complication.
3. Systolic blood pressure 140-180mm of Hg and diastolic blood pressure 90-110mm Hg on at least three office measurement.

B. Exclusion criteria
1. Patients refusal to participate in the study.
2. Patients of severe malignant hypertension (SBP > 180mm of Hg and DBP > 110 mm of Hg)
3. Pregnant lady.
4. Other genetic, systemic and rheumatic disease.

C. Laboratory investigations
1. Routine blood
2. Routine urine
3. Total cholesterol
4. ECG

D. Criteria for assessment
The assessment of the trial was done on the basis of following parameters:
- 
- Subjective : The subjective assessment was done on the basis of following:
  Improvement in the following symptoms of Hypertension
  1. Severity of Headache
  2. Severity of Dizziness / Vertigo
  3. Severity of Insomnia
  4. Severity of easy fatigability
  5. Severity of Dyspnoea.
The above symptoms were graded as below
None 0
Mild 1
Moderate 2
Severe 4
- Objective: The fall of Systolic and Diastolic Blood pressure in every 15 days interval taken as objective parameter. The proper measurement of the systemic arterial pressure by cuff sphygmomanometer is one of the hardcore determinations of blood pressure. In this study all norms applied for measuring proper blood pressure.

E. Methods of treatment:
Clinical study: An open non comparataive clinical evaluation was done by inducing a dry powder of Clerodendrum glandulosum Lindl.

Dose and Duration: 1 gm in dry powder form twice daily with lukewarm water for 60 days.

F. Assessment & Follow Up – The assessment of the patient was done at the interval of 15 days.

G. Statistical Analysis:
Total 100 numbers of patients registered. 14 patients have dropped out and 86 patients have been taken for the study. Mean, Standard deviation, Standard error and Z values are are calculated and finally ‘p’ values are observed to know statistically significant or not.

OBSERVATION AND RESULT:
Out of 86 patients maximum patients i.e. 59.30% was male and majority i.e. 39.55% belonged to age group of 51-60 years. Most of the patients were Hindu i.e. 72.09%, majority of i.e. 32.55% was service men and 44.18% was of poor socio-economic status. Majority i.e. 74.41% were married and 73.25% were of urban habitate. 36.04% had diagnosed within 1 year 12.79% were diagnosed before 5 years. 40.68% were without medication and 34.88% were irregular medication. 43.02% patients have no any family history of hypertension. 96.51% were non-vegetarian, maximum patients addicted to tea or coffee and betel nut and 39.52% were with mild physical activity.

59.3% patients have Insomnia, 66.2% have Dizziness, 44.1% have headache, 47.6% have Dyspnoea and 68.6% have Easy fatigability during first clinical examination.
a. Effect of drug on systolic blood pressure
The initial mean + SD of Systolic blood pressure was 145.93 + 10.4 was reduced to 142 + 10.3 after 15 days, then after 30 days it was reduced to 141.5 + 8.8, after 45 days it was 137.9 + 6.8 and after 60 days reduced to 134.30 + 9.0. The reduction of systolic blood pressure after 15 days is statistically significant and after 30 days, 45 days & 60 days is statistically highly significant. It implies that the effect of trial drug on systolic blood pressure is highly significant.

<table>
<thead>
<tr>
<th>N=86</th>
<th>BT</th>
<th>FU1</th>
<th>BT-FU1</th>
<th>FU2</th>
<th>BT-FU2</th>
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<th>BT-FU3</th>
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<tr>
<td>Mean</td>
<td>145.93</td>
<td>142.09</td>
<td>141.5</td>
<td>137.9</td>
<td>134.30</td>
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<tr>
<td>SD</td>
<td>10.4</td>
<td>10.3</td>
<td>8.8</td>
<td>6.8</td>
<td>9.0</td>
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b. Effect of drug on diastolic blood pressure
The initial mean + SD of Diastolic blood pressure was 98.72 + 5.69 reduced to 92.79 + 5.17 after 15 days, then after 30 days it was reduced to 86.39 + 5.66, after 45 days reduced to 83.4 + 4.41 and after 60 days it was reduced to 80.81 + 3.97. The reduction of diastolic blood pressure after 15 days, 30 days, 45 days and 60 days are statistically highly significant. It implies that the effect of trial drug on diastolic blood pressure is highly significant.

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<tr>
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<td>86.39</td>
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<td>80.81</td>
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<tr>
<td>SD</td>
<td>5.69</td>
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<td>5.66</td>
<td>4.41</td>
<td>3.97</td>
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c. Effect of drug on Insomnia
The initial mean + SD of symptom Insomnia was 0.76 + 0.18 reduced to 0.28 + 0.38 after 60 days which implies effect of trial drug statistically significant.

d. Effect of drug on Dizziness
The initial mean + SD of symptom Dizziness was 0.81 + 0.46 reduced to 0.10 + 0.29 after 60 days which implies effect of trial drug statistically highly significant.

e. Effect of drug on Headache
The initial mean + SD of symptom Headache was 0.62 + 0.69 reduced to 0.22 + 0.45 after 60 days which implies effect of trial drug statistically significant.

f. Effect of drug on Dyspnoea
The initial mean + SD of symptom Dyspnoea was 0.56 + 0.51 reduced to 0.13 + 0.35 after 60 days which implies effect of trial drug statistically significant.

g. Effect of drug on Easy fatigability
The initial mean + SD of Easy fatigability was 0.73 + 0.35 reduced 0.05 + 0.23 which implies the effect of trial drug is statistically highly significant.

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<tr>
<td>SD</td>
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<td>0.86</td>
<td>0.86</td>
<td>0.77</td>
<td>0.74</td>
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DISCUSSION AND CONCLUSION
- Undetected & uncontrolled hypertension that increases the cardiovascular risk is a major contributor of stroke worldwide in now a days. Awareness programes are initial and vital step toward optimal control.
- Herbal drugs are always beneficial for management of diseases and promotion good health. Assamese tribal and non tribal people use some antihypertensive herbs in their day to day life like Clerodendrum colebrookianum, Allium sativum, Terminalia arjuna etc.
The present clinical study shows that *Clerodendrum glandulosum* Lindl. is very effective in the management of essential hypertension. No untoward effect was noted during treatment and follow up period and patient satisfaction also noted. Though this study is a preliminary study as a part of the educational research programme with limited number of patients in a fix stipulated time. In order to establish the antihypertensive effect of this drug, a broad spectrum clinical and experimental study is required with the application of new technology to establish its effect in view of modern and scientific approach.

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