

# **The effect of a homoeopathic complex containing *Amylenum nitrosum* 6cH, *Crataegus oxyacantha* 6cH, *Natrum muriaticum* 6cH and *Scutellaria lateriflora* 6cH on blood pressure in adults with refractory hypertension.**

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**Background:** Refractory hypertension is defined as blood pressure that remains above 140/90 mmHg, despite the adherence to appropriate life style changes and the concurrent use of optimal doses of 3 antihypertensive agents of different classes.<sup>1</sup> Refractory hypertension has a worse prognosis than that of essential hypertension; a higher prevalence of subclinical organ damage can be found in patients with resistant hypertension.<sup>5</sup>

**Aim:** The aim of the study is to investigate the effect of a homoeopathic complex containing *Amylenum nitrosum* 6cH, *Crataegus oxyacantha* 6cH, *Natrum muriaticum* 6cH and *Scutellaria lateriflora* 6cH on blood pressure in adults with refractory hypertension, by means of blood pressure readings.

**Method:** Participants previously diagnosed with refractory hypertension were recruited by means of purposive sampling. The study was a six week, double-blind, placebo-controlled study. Participants were divided into two groups, namely: the treatment and placebo groups, which received 30ml identical amber glass bottles of either the placebo or the treatment remedy every week that looked, tasted and smelled the same.

**Results:** Participants in both the groups showed a decline in blood pressure over the study period. The results indicated that there was no statistically significant difference in blood pressure readings between the two groups at any point in time.

**Keywords:** Refractory hypertension, *Amylenum nitrosum*; *Crataegus oxyacantha*; *Natrum muriaticum*; *Scutellaria lateriflora*; Homoeopathy

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## Introduction

Refractory hypertension (Resistant high blood pressure) is a challenge both to health practitioners as well as to patients themselves, as high blood pressure (hypertension) remains one of the most prominent of all health related problems in developed societies worldwide, and is associated with ever increasing obesity rates.<sup>1</sup>

Hypertension results in 7.6 million deaths annually and 92 million disability adjusted years worldwide,<sup>2</sup> and thus it is the number one determinable risk factor for mortality throughout the world.<sup>3</sup> In Sub-Saharan Africa it is regarded as one of the greatest health challenges after human immunodeficiency virus infection (HIV) and acquired immune deficiency syndrome (AIDS).<sup>4</sup>

Although hypertension is generally asymptomatic, it may however present with signs and symptoms relating to the cause in cases of secondary hypertension. Malignant hypertension may present with a headache and multiple neurological deficits such as stupor, sensory or motor disturbances.<sup>4</sup>

Refractory hypertension has a worse prognosis than that of primary hypertension; a higher prevalence of subclinical organ damage can be found in patients with refractory hypertension, including left ventricular hypertrophy, hypertensive retinopathy, albuminuria and initial impairment of renal function.<sup>5</sup>

Diagnosis of high blood pressure is made based on at least 3 different blood pressure readings taken on three consecutive days preferably at the same time of day. Special investigations are not routine, they are mostly performed in patients younger than 40 years of age and those presenting with severe or refractory hypertension (Bevers *et al.*, 2007).<sup>1</sup>

In hypertensive individuals, lifestyle modifications serve as initial therapy before the

start of pharmacological therapy and as an adjunct to those already on drug therapy (Libby *et al.*, 2010).<sup>6</sup>

If after six months of lifestyle modification, systolic pressure remains >140 mmHg or diastolic blood pressure remains >90 mmHg antihypertensive drugs are required.<sup>7</sup>

Refractory hypertension is then diagnosed when blood pressure remains above 140/90 mmHg, despite the adherence to appropriate life style changes and the concurrent use of optimal doses of three antihypertensive agents of different classes, one being a diuretic. Patients whose blood pressure can be controlled only through the use of four or more antihypertensive medications are also said to have refractory hypertension.<sup>8</sup>

There has been little research conducted on the effect of homoeopathic remedies on hypertension. One four-week, double-blind, placebo-controlled study on adult males with essential hypertension compared a homoeopathic complex containing: *Viscum album* 6cH, *Crataegus oxyacantha* 6cH, *Rauwolfia serpentina* 6cH, *Lachesis mutans* 6cH, *Natrium muriaticum* 6cH and *Veratrum album* 6cH to a placebo. The homoeopathic complex produced a statistically significant greater decrease in blood pressure compared to placebo.<sup>9</sup>

A six-week, double-blind, placebo-controlled study using a homoeopathic complex containing *Crataegus oxyacantha* 6cH, *Viscum album* 6cH, *Digitalis purpurea* 6cH and *Glonoine* 6cH was conducted on 30 adult black participants from Gauteng South Africa with essential hypertension. There was also a statistically significant decrease in blood pressure in the treatment group compared to placebo.<sup>10</sup>

A four week study was conducted to compare the efficacy of the homoeopathic simillimum and a homoeopathic complex (*Aurum metallicum* 6cH, *Lachesis muta* 6cH, *Natrum*

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*muriaticum* 6CH, and *Veratrum album* 6CH) in the treatment of primary hypertension in adult females. There was a statistically significant decline in both diastolic and systolic blood pressures of both the groups on the homoeopathic treatment.<sup>11</sup>

Another double-blind, randomized, placebo-controlled study was conducted on 150 participants. The aim was to evaluate whether individualized homoeopathy can produce any significant effect different from placebo in essential hypertension by comparing the lowering of blood pressure between groups. The outcome measures were assessed after three months and six months. Individualized homoeopathy produced a significantly different hypotensive effect than placebo.<sup>12</sup>

The aim of the study is to investigate the effect of a homoeopathic complex containing *Amylenum nitrosum* 6cH, *Crataegus oxyacantha* 6cH, *Natrum muriaticum* 6cH and *Scutellaria lateriflora* 6cH on blood pressure in adults with refractory hypertension, by means of blood pressure readings.

## Material and Methods

This study was conducted at the Homoeopathy health clinic at the University of Johannesburg Doornfontein Campus, and at Nanga Vutshilo (choose life) Community based Centre in Soweto, Gauteng. The study was approved by the University Johannesburg Faculty of Health Sciences Research Committee and was given the following clearance numbers, AEC-01-65-2014 and HDC 01-64-2015. The study was also registered on the clinical Trial registry REC-241112-035. Participation was voluntary and participants held the right to withdraw at any point without prejudice.

## Research sample and inclusion criteria

Participants previously diagnosed with refractory hypertension were recruited by means of purposive sampling. Advertisement were placed at Nanga Vutshilo choose life Community based centre and at the homoeopathy health clinic at the University of Johannesburg. With relevant permission obtained and all consultations occurred under supervision of a qualified clinician.

Participants were included in the study if they: were male or female, between the ages 35-65 years; had a systolic blood pressure between 140 mmHg-165 mmHg; had a diastolic blood pressure between 85 mmHg-95 mmHg; and Were on conventional anti-hypertensive medication (ACE-inhibitor or ARB's, and/or diuretic, and /or calcium channel blocker).

Participants were excluded from the study if they: had a systolic blood pressure < 140 mmHg; > 165 mmHg; had a diastolic blood pressure < 85 mmHg; > 95mmHg; were pregnant or lactating; were on any other herbal or homoeopathic medicine for the treatment of hypertension; Had secondary organ damage from hypertension; and Suffered from chronic conditions such as severe cardiac disease, renal failure, malignant hypertension or diabetes mellitus.

Participants were requested not to make any changes to their diet or lifestyle and not to take any other medication (including herbal, homoeopathic or supplemental) for their hypertension for the duration of the study. All participants were also asked to continue with their prescribed medication for the duration of the study.

## Research design and procedure

This study was a six week, double-blind, placebo-controlled study. Potential participants that responded to the advert attended an initial consultation and were requested to sign a

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Participant Information and Consent Form. The medical history and physical examination (including vital signs, fundoscopic exam, cardiovascular exam, respiratory exam and urinalysis) were recorded on the Case Form. Blood pressure readings were taken on each arm with a manual BP cuff according to standard operating procedures. Those participants that qualified for the study were placed into two groups. One group received a 30ml bottle of the homoeopathic complex and the other group a 30ml bottle of placebo. Follow-up consultations took place every week and participants were requested to bring with their medication bottles for assessment of compliance; BP readings were recorded on the data collection form. All participants were given the Dietary Approaches to Stop Hypertension (DASH) eating plan at the end of the study to help control their hypertension.

### **Medication administration**

The medication was randomized by an independent person; both groups received 30ml identical amber glass bottles of either the placebo or the treatment remedy every week. The placebo (un-medicated alcohol) looked, tasted and smelled the same as the treatment medication (containing containing *Amylenum nitrosum* 6cH, *Crataegus oxyacantha* 6cH, *Natrum muriaticum* 6cH and *Scutellaria lateriflora* 6cH). Participants were instructed to take 10 drops, thrice daily under the tongue, 30 minutes before or after meals, starting from day one.

### **Reliability and Validity**

The homoeopathic complex and the placebo was supplied by a registered homoeopathic laboratory (Comed); a qualified dispenser prepared the complex according to the method laid out in the German Homoeopathic Pharmacopoeia.<sup>13</sup> Comed laboratory follows the South African guidelines of good manufacturing practice (GMP). A Dura Shock Handheld Aneroid sphygmomanometer model

DS55 was used to measure BP since manual sphygmomanometers are said to be more accurate than automatic ones.<sup>14</sup> Measurements were conducted according to standard operating procedures.<sup>15</sup> The sphygmomanometer was calibrated, and an obese BP cuff was used for overweight participants to ensure reliable results. Attempts were made for BP to be measured at the same time of day.

### **Data analysis**

Data was analyzed using the following non-parametric methods: inter-group analysis was conducted with the Mann-Whitney U-test; intra-group analysis was done using the Friedman and the Wilcoxon-Signed Ranks tests.

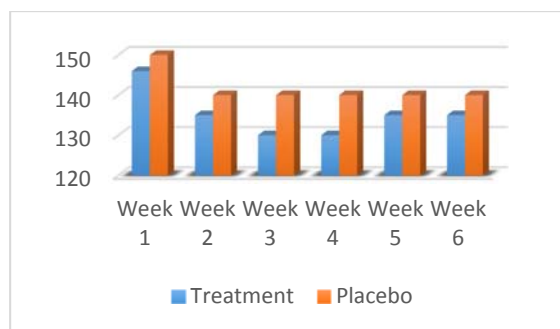
### **Results**

Forty two participants with resistant hypertension were initially recruited using non-probability sampling into the study. Nine participants were excluded from the study due to lack of compliance with regards to their follow up appointments. The total number of participants that completed the study was 33; 18 participants were in the treatment group and 15 participants in the placebo group.

The median systolic blood pressure readings of the treatment and placebo groups over the six week study are represented by Graph 4.4. The median systolic blood pressure at week 1 for the treatment group was 146 (*IQR* = 11), and for the placebo group was 150 (*IQR* = 20). At week 6 the median systolic blood pressure for the treatment group was 135 (*IQR* = 24) and the median for the placebo group was 140 (*IQR* = 14). Both groups showed a similar decrease over the study period.

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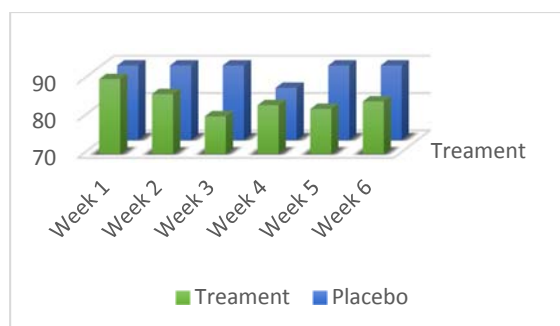
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**Figure 1** Median systolic blood pressure values of the treatment and placebo groups.

Figure 2 below represents the Wilcoxon signed ranks test results for the follow-up intra-group analysis for the systolic blood pressure for both the treatment and placebo groups. The Bonferroni adjustment was applied, therefore  $p < 0.01$  is considered statistically significant. In the treatment group statistically significant improvement occurred within the first 2 weeks, and continued until week 5; whereas the placebo group showed no significant improvement at any point in time, indicating that the improvement was gradual.

The median diastolic blood pressure at week 1 for the treatment group was 90.00 ( $IQR = 2$ ), and the median diastolic blood pressure for the placebo group was 90.00 ( $IQR = 9$ ). At week 6 the median diastolic blood pressure for the treatment group was 84.00 ( $IQR = 14$ ) and the median diastolic blood pressure for the placebo group was 90 ( $IQR = 19$ ). The treatment group therefore had a reduction of 6mmHg whereas the placebo group showed no change.



**Figure 2** Median diastolic blood pressure values of the treatment group and the placebo groups.

The Wilcoxon signed ranks test results for the intra group analysis for the diastolic blood

pressure over the six week period for both the treatment and placebo groups. In the treatment group statistically significant improvement occurred within the first 2 weeks, and in the 4th week; whereas the placebo group showed no significant improvement at any point in time.

However the Mann-Whitney U test results indicated that there was no statistically significant difference in both the systolic diastolic blood pressure readings between the two groups at any point in time. This indicates that neither group outperformed the other.

## Discussion

Non-parametric measures were used to analyse the data; the Mann-Whitney U test was used for inter-group analysis, and the Friedman and the Wilcoxon signed ranks tests were used for intra-group analysis. The Shapiro-Wilk test was used to assess for normality in distribution of variables between the placebo and treatment groups.

The treatment group showed a 11mmHg decrease in median systolic blood pressure by week six of the study. The major decline was observed at week two and continued for the next four weeks. The placebo group had a steady decline in the median systolic blood pressure of 10mmHg over the six week period. This decline was statistically significant for both the groups. Inter-group analysis revealed that neither group outperformed the other. The homoeopathic complex therefore did not lower blood pressure significantly better than the placebo.

The median diastolic blood pressure for the treatment group showed a statistically significant decline by week six of the study dropping by 6 mmHg. The median diastolic blood pressure for the placebo group did not show any decline by week six.

The overall inter-group analysis done using the Mann-Whitney U test showed a  $p$  value greater than 0.05, therefore even though there was a statistically significant decline in intra-group analysis of the diastolic blood pressure of the treatment group, the comparison between the



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groups indicates that the diastolic blood pressure decline was not statistically significant therefore neither group outperformed the other. The study sample consisted of 33 participants which is relatively small. Doing a study on a small sample results in certain risks such as: failing to find the real effect because of inadequate statistical power, and not accurately reflecting the population from which the study sample was drawn from.<sup>16</sup> This study was a six-week study, done on refractory hypertension, which is a chronic illness. Chronic diseases affect people longer and it takes many adjustment for a patient to get the desired outcome. They do not resolve spontaneously and complete cure is seldom achieved.<sup>17</sup>

### Conclusion

Thirty-three participants completed this study. Participants in both the groups showed a decline in blood pressure over the study period. The results indicated that there was no statistically significant difference in blood pressure readings between the two groups at any point in time. Therefore it can be concluded that the homoeopathic complex was not more effective in lowering both systolic and diastolic blood pressure in people who have refractory hypertension, however future research should consider using a larger sample group and extending the duration of the study period.

### Acknowledgement

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