International Journal of Homoeopathic Sciences

**E-ISSN:** 2616-4493
**P-ISSN:** 2616-4485
www.homoeopathicjournal.com
IJHS 2023; 7(1): 340-347
Received: 13-11-2022
Accepted: 20-12-2022

**Dr. Salini Mandal BG**
Department of Physiology and Biochemistry, Government Homoeopathic Medical College, Thiruvananthapuram, Kerala University of Health Sciences, Kerala, India

**Dr. Prennie Vidiera**
Department of Homoeopathic Pharmacy, Father Muller Homoeopathic Medical College, Mangaluru, Rajiv Gandhi University of Health Sciences, Kerala, India

**Corresponding Author:**
**Dr. Salini Mandal BG**
Department of Physiology and Biochemistry, Government Homoeopathic Medical College, Thiruvananthapuram, Kerala University of Health Sciences, Kerala, India

# A pilot study to evaluate the cholesterol lowering effect in camellia sinensis 3x

**Dr. Salini Mandal BG and Dr. Prennie Vidiera**

**DOI:** https://doi.org/10.33545/26164485.2023.v7.i1f.774

**Abstract**
One of the best natural sources of antioxidants is Camellia Sinensis (green tea), and it has one positive effect on cholesterol levels. Moreover, Homoeopathy increases the medicinal value of the particular medicine. Thus, this study is to evaluate whether Homoeopathically prepared Camellia sinensis in its 3x potency can bring changes to the Cholesterol levels.
A sample of minimum 40 cases were selected from Out Patient Department and other Peripheral centres of Father Muller Homoeopathic Medical College and Hospital, according to inclusion and exclusion criteria. After selecting the cases, informed consent was taken from each patient. A blood Investigation to know the level of Plasma triglycerides, Total Cholesterol, Low density Lipoprotein, High Density lipoprotein and Very Low Density Lipoprotein was done and filed. The selected patients were given Homoeopathically prepared Camellia sinensis 3X, three pills thrice a day (3-3-3) for a time period of 3 months. After 3 months of administration of the remedy, the levels of Plasma triglycerides, Total Cholesterol, High Density Lipoprotein, Low density Lipoprotein and VLDL were investigated and filed. The data available were then statistically analysed with the help of paired t test.
Out of the 40 patients, it was seen that the 60% of the subjects were females. The age group mostly affected were that of 20 years – 25 years having 22.5%. 45% of the subjects belonged to Christian community, 42.5% were from Islamic community and 12.5% were Hindu community.
Out of the 40 cases, most of the cases showed significant reduction in the levels of Total Cholesterol, Plasma Triglyceride and Low Density Lipoprotein, it also saw a reduction of the levels of High Density Lipoprotein and increase in the levels of Very Low Density Lipoprotein. The statistical analysis clearly stated the non-significant action of Camellia sinensis 3x on the High Density Lipoprotein ($p$>.001) and Very Low Density Lipoprotein ($p$>.001). It also stated the significant action of Camellia sinensis 3x on Total Cholesterol ($p$<.001), Plasma Triglyceride ($p$<.001) and Low Density Lipoprotein ($p$<.001).

**Keywords:** Homoeopathy, camellia sinensis, green tea, hyperlipidemia.

## Introduction
The most prevalent disease condition in this day and age is the rising cholesterol levels in many people. The development of coronary artery disease, cardiovascular disease, tendon xanthomas, lipemia retinalis, and many other conditions is brought on by a variety of factors, including changing lifestyles and eating habits as well as an inevitable rise [1].
Tea is regarded as the highest-ranking beverage on the planet. Actually, tea is the beverage that people drink the most worldwide, second only to water [2]. Green tea (Camellia sinensis), one of the many varieties of tea, is one of the best natural sources of antioxidants [3, 4] There are so many different ways that green tea is good for your health. One of them is a decrease in cholesterol levels [5, 6].
In Homoeopathic preparation of a medicine, it is said to increase the medicinal value of the particular medicine [7] We, in this study, Homoeopathically gave Camellia Sinensis to the patients having increased Cholesterol levels and evaluated whether it has got the cholesterol lowering effect. Thus it can render help to the fraternity to use the remedy.

## Materials and Methods
**Source and method of collection of data:** A sample of minimum 40 cases were selected from Out Patient Department and other Peripheral centres of Father Muller Homoeopathic Medical College and Hospital, according to inclusion and exclusion criteria.

**Sample Size**
Prevalence – 37.5%

$$n = \frac{z^{\alpha 2} p(1-p)}{e^2}$$

Zα = 1.96 at 95% C.I
p= 0.375
e (allowable error) = 15%
n = 40.016 =40 cases

**Inclusion Criteria**
1. Subjects of both sexes aged 20 – 65 years
2. Subjects treated with same dietary therapy
3. TG >150mg/dl, Cholesterol >200 mg/dl, LDL >100 mg/dl
4. Subjects having a Body Mass Index of 19 – 40 kg/m$^2$

**Exclusion criteria**
1. Patient who have a history of recent trauma, surgery, Myocardial Infarction within 12 weeks.
2. Pregnant women and Lactating Mother
3. Patients having moderate to severe liver dysfunction
4. Patients having Abnormal Renal Function, Severe dysfunction of Heart.
5. Patients having history of acute diabetes mellitus complication
6. Patients diagnosed to have psychiatric illness
7. Presently using drugs for treatment of diabetes mellitus or dyslipidemia.
8. Patients with history of familial hypercholesterolemia.

**Study Design:** This study was a Pretest – Post test study design.

**Methodology**
After selecting the cases, informed consent was taken from each patient. A blood investigation to know the level of Plasma triglycerides, Total Cholesterol, Low density Lipoprotein and VLDL was done and filed. The selected patients were given Homoeopathically prepared Camellia sinensis 3X, three pills thrice a day (3-3-3) for a time period of 3 months. After 3 months of administration of the remedy, the levels of Plasma triglycerides, Total Cholesterol, High Density Lipoprotein, Low density Lipoprotein and VLDL were investigated and filed. The data available were then statistically analysed with the help of paired t test.

**Research Hypothesis**
a. **Alternate Hypothesis**: Significant improvement in level of Plasma triglycerides, Total Cholesterol, Low density Lipoprotein, High density Lipoprotein and VLDL after taking Camellia sinensis 3X.
b. **Null Hypothesis**: No significant improvement is observed in the level of Plasma triglycerides, Total Cholesterol, High density Lipoprotein, Low density Lipoprotein and VLDL after Camellia sinensis3X

**Plan for data analysis:** The changes in the Plasma triglycerides, Total Cholesterol, High density Lipoprotein, Low density Lipoprotein and VLDL were evaluated before and after the homoeopathic treatment by paired-'t' test using Statistical Package for the GNU PSPP Software.

**Results**
The aim behind this study was to check the cholesterol lowering effects in the Homoeopathically prepared Camellia sinensis 3x (Green Tea). 40 patients were selected with regards to the Inclusion and Exclusion criteria. The remedy was administered to the patients with high cholesterol levels for a period of 3 months. The parameters taken into consideration are Total Cholesterol, Triglyceride, Low Density Lipoprotein, High Density Lipoprotein and Very Low Density Lipoprotein.
Out of the 40 patients, it was seen that the 60% of the subjects were females. The age group mostly affected were that of 20 years – 25 years having 22.5%. 45% of the subjects were Christians, 42.5% were from Islamic community and 12.5% were Hindu.
Out of the 40 cases, where were most of the cases showed significant reduction in the levels of Total Cholesterol, Plasma Triglyceride and Low Density Lipoprotein, it also saw a reduction of the levels of High Density Lipoprotein and increase in the levels of Very Low Density Lipoprotein.
The statistical analysis clearly stated the non-significant action of Camellia sinensis 3x on the High Density Lipoprotein ($p$>.001) and Very Low Density Lipoprotein ($p$>.001). It also stated the significant action of Camellia sinensis 3x on Total Cholesterol ($p$<.001), Plasma Triglyceride ($p$<.001) and Low Density Lipoprotein ($p$<.001).

**Discussion**
The 40 subjects with high cholesterol levels (Total Cholesterol, Plasma Triglyceride, Low Density Lipoprotein, High Density Lipoprotein, Very Low Density Lipoprotein) were selected scrutinising with the Inclusion and Exclusion criteria.
The p-value obtained after analysing the before and after values of Total Cholesterol is <0.001, suggestive of the significant changed levels of Total Cholesterol with Camellia sinensis 3x.
The p-value obtained after analysing the before and after values of Plasma Triglyceride is <0.001, suggestive of the significant changed levels of Plasma Triglyceride with Camellia sinensis 3x.
The p-value obtained after analysing the before and after values of Low Density Lipoprotein is <0.001, suggestive of the significant changed levels of Low Density Lipoprotein with Camellia sinensis 3x.
The p value obtained after analysing the before and after values of High Density Lipoprotein (.245) is >0.001, suggest that Camellia sinensis 3x could not bring changes in the level of High Density Lipoprotein.
The p value obtained after analysing the before and after values of Very Low Density Lipoprotein (.005) is >0.001, suggest that Camellia sinensis 3x could not bring changes in the level of Very Low Density Lipoprotein.
By observing the results, we can state that Camellia sinensis 3x can bring significant changes in Total Cholesterol, Plasma Triglyceride and Low Density Lipoprotein. But it fails in bringing significant change in High Density Lipoprotein and Very Low Density Lipoprotein.

**Table 1:** Distribution according to Age

| AGE | Number of patients | Percentage |
|---|---|---|
| 21-25yrs | 9 | 22.5 |
| 26-30yrs | 3 | 7.5 |
| 31-35yrs | 3 | 7.5 |
| 36-40yrs | 6 | 15 |
| 41-45yrs | 4 | 10 |
| 46-50yrs | 6 | 15 |
| 51-55yrs | 4 | 10 |
| 56-60yrs | 1 | 2.5 |
| 61-65yrs | 4 | 10 |

**Table 2:** Distribution according to Gender

| Gender | Number of patients | Percentage |
|---|---|---|
| Male | 16 | 40 |
| Female | 24 | 60 |

**Table 3:** Distribution of levels according to levels of Total Cholesterol

| SL | REG NO | Total Cholesterol | |
|---|---|---|---|
| | | BEFORE | AFTER |
| 1. | HCC1 | 208 | 160 |
| 2. | HCC2 | 284 | 180 |
| 3. | HCC3 | 270 | 110 |
| 4. | HCC4 | 253 | 145 |
| 5. | HCC5 | 208 | 200 |
| 6. | HCC6 | 203 | 212 |
| 7. | HCC8 | 245 | 274 |
| 8. | HCC10 | 290 | 292 |
| 9. | HCC13 | 265 | 298 |
| 10. | HCC14 | 318 | 210 |
| 11. | HCC19 | 246 | 150 |
| 12. | HCC25 | 280 | 195 |
| 13. | HCC28 | 298 | 154 |
| 14. | HCC29 | 204 | 191 |
| 15. | HCC30 | 272 | 190 |
| 16. | HCC31 | 205 | 184 |
| 17. | HCC34 | 295 | 192 |
| 18. | HCC35 | 290 | 192 |
| 19. | HCC36 | 210 | 154 |
| 20. | HCC37 | 250 | 152 |
| 21. | HCC38 | 210 | 178 |
| 22. | HCC39 | 280 | 180 |
| 23. | HCC42 | 210 | 181 |
| 24. | HCC45 | 207 | 148 |
| 25. | HCC46 | 235 | 164 |
| 26. | HCC47 | 235 | 187 |
| 27. | HCC49 | 285 | 172 |
| 28. | HCC51 | 258 | 158 |
| 29. | HCC52 | 230 | 191 |
| 30. | HCC54 | 210 | 189 |
| 31. | HCC55 | 286 | 65 |
| 32. | HCC56 | 287 | 187 |
| 33. | HCC57 | 276 | 200 |
| 34. | HCC58 | 286 | 178 |
| 35. | HCC59 | 298 | 175 |
| 36. | HCC60 | 282 | 179 |
| 37. | HCC61 | 277 | 176 |
| 38. | HCC9 | 296 | 187 |
| 39. | HCC7 | 293 | 154 |
| 40. | HCC17 | 280 | 160 |

**Table 4:** Distribution of levels according to levels of Plasma Triglyceride

| SL | Reg. No | Plasma Triglyceride | |
|---|---|---|---|
| | | Before | After |
| 1. | HCC1 | 157 | 66 |
| 2. | HCC2 | 156 | 61 |
| 3. | HCC3 | 159 | 145 |
| 4. | HCC4 | 173 | 79 |
| 5. | HCC5 | 158 | 151 |
| 6. | HCC6 | 157 | 123 |
| 7. | HCC8 | 219 | 189 |
| 8. | HCC10 | 157 | 125 |
| 9. | HCC13 | 178 | 137 |
| 10. | HCC14 | 185 | 116 |
| 11. | HCC19 | 185 | 82 |
| 12. | HCC25 | 850 | 352 |
| 13. | HCC28 | 157 | 107 |
| 14. | HCC29 | 155 | 149 |
| 15. | HCC30 | 270 | 186 |
| 16. | HCC31 | 169 | 103 |
| 17. | HCC34 | 180 | 198 |
| 18. | HCC35 | 210 | 181 |
| 19. | HCC36 | 166 | 78 |
| 20. | HCC37 | 170 | 81 |
| 21. | HCC38 | 197 | 83 |
| 22. | HCC39 | 163 | 146 |
| 23. | HCC42 | 190 | 138 |
| 24. | HCC45 | 157 | 82 |
| 25. | HCC46 | 155 | 109 |
| 26. | HCC47 | 210 | 191 |
| 27. | HCC49 | 180 | 108 |
| 28. | HCC51 | 168 | 143 |
| 29. | HCC52 | 152 | 102 |
| 30. | HCC54 | 186 | 117 |
| 31. | HCC55 | 152 | 65 |
| 32. | HCC56 | 151 | 124 |
| 33. | HCC57 | 158 | 136 |
| 34. | HCC58 | 180 | 116 |
| 35. | HCC59 | 167 | 124 |
| 36. | HCC60 | 153 | 58 |
| 37. | HCC61 | 195 | 135 |
| 38. | HCC9 | 167 | 125 |
| 39. | HCC7 | 159 | 113 |
| 40. | HCC17 | 173 | 68 |

**Table 5:** Distribution of levels according to levels of Low Density Lipoprotein

| SL | Reg. No | Low Density Lipoprotein | |
|---|---|---|---|
| | | Before | After |
| 1. | HCC1 | 124 | 135 |
| 2. | HCC2 | 107 | 74 |
| 3. | HCC3 | 183 | 77 |
| 4. | HCC4 | 161 | 98 |
| 5. | HCC5 | 117 | 126 |
| 6. | HCC6 | 138 | 102 |
| 7. | HCC8 | 140 | 98 |
| 8. | HCC10 | 107 | 121 |
| 9. | HCC13 | 179 | 123 |
| 10. | HCC14 | 145 | 132 |
| 11. | HCC19 | 139 | 93 |
| 12. | HCC25 | 145 | 102 |
| 13. | HCC28 | 134 | 98.6 |
| 14. | HCC29 | 191 | 105 |
| 15. | HCC30 | 184 | 105 |
| 16. | HCC31 | 180 | 107 |
| 17. | HCC34 | 190 | 104 |
| 18. | HCC35 | 196 | 106 |
| 19. | HCC36 | 188 | 90 |
| 20. | HCC37 | 194 | 93 |

| | | | |
|---|---|---|---|
| 21. | HCC38 | 190 | 82 |
| 22. | HCC39 | 189 | 102 |
| 23. | HCC42 | 117 | 110 |
| 24. | HCC45 | 179 | 72 |
| 25. | HCC46 | 130 | 98 |
| 26. | HCC47 | 107 | 98 |
| 27. | HCC49 | 170 | 104 |
| 28. | HCC51 | 106 | 89 |
| 29. | HCC52 | 188 | 127 |
| 30. | HCC54 | 121 | 108 |
| 31. | HCC55 | 103 | 95 |
| 32. | HCC56 | 104 | 100 |
| 33. | HCC57 | 102 | 98 |
| 34. | HCC58 | 112 | 93 |
| 35. | HCC59 | 221 | 113 |
| 36. | HCC60 | 109 | 85 |
| 37. | HCC61 | 128 | 106 |
| 38. | HCC9 | 105 | 87 |
| 39. | HCC7 | 110 | 85 |
| 40. | HCC17 | 190 | 92 |

**Table 6:** Distribution of levels according to levels of High Density Lipoprotein

| SL | Reg No | High density lipoprotein | |
|---|---|---|---|
| | | Before | After |
| 1. | HCC1 | 45 | 46 |
| 2. | HCC2 | 53 | 46 |
| 3. | HCC3 | 61 | 57 |
| 4. | HCC4 | 67 | 62 |
| 5. | HCC5 | 62 | 45 |
| 6. | HCC6 | 39 | 54 |
| 7. | HCC8 | 61 | 46 |
| 8. | HCC10 | 53 | 43 |
| 9. | HCC13 | 62 | 46 |
| 10. | HCC14 | 56 | 50 |
| 11. | HCC19 | 43 | 47 |
| 12. | HCC25 | 66 | 52 |
| 13. | HCC28 | 42 | 34 |
| 14. | HCC29 | 54 | 46 |
| 15. | HCC30 | 38 | 47 |
| 16. | HCC31 | 54 | 46 |
| 17. | HCC34 | 57 | 49 |
| 18. | HCC35 | 42 | 47 |
| 19. | HCC36 | 44 | 48 |
| 20. | HCC37 | 46 | 46 |
| 21. | HCC38 | 43 | 40 |
| 22. | HCC39 | 48 | 56 |
| 23. | HCC42 | 43 | 43 |
| 24. | HCC45 | 32 | 39 |
| 25. | HCC46 | 50 | 42 |
| 26. | HCC47 | 45 | 48 |
| 27. | HCC49 | 36 | 46 |
| 28. | HCC51 | 49 | 54 |
| 29. | HCC52 | 45 | 48 |
| 30. | HCC54 | 50 | 49 |
| 31. | HCC55 | 42 | 43 |
| 32. | HCC56 | 48 | 50 |
| 33. | HCC57 | 43 | 47 |
| 34. | HCC58 | 43 | 41 |
| 35. | HCC59 | 54 | 56 |
| 36. | HCC60 | 39 | 42 |
| 37. | HCC61 | 43 | 47 |
| 38. | HCC9 | 69 | 69 |
| 39. | HCC7 | 57 | 43 |
| 40. | HCC17 | 38 | 44 |

**Table 7:** Distribution of levels according to levels of Very Low Density Lipoprotein

| Sl. | Reg no | Very low density lipoprotein | |
|---|---|---|---|
| | | Before | After |
| 1. | HCC1 | 22.4 | 13 |
| 2. | HCC2 | 23.2 | 12 |
| 3. | HCC3 | 25.8 | 14.8 |
| 4. | HCC4 | 24.2 | 12 |
| 5. | HCC5 | 23.6 | 30.2 |
| 6. | HCC6 | 25.4 | 18 |
| 7. | HCC8 | 43.5 | 37.8 |
| 8. | HCC10 | 29.4 | 25 |
| 9. | HCC13 | 23.6 | 27 |
| 10. | HCC14 | 31 | 23 |
| 11. | HCC19 | 17 | 16 |
| 12. | HCC25 | 170 | 87.8 |
| 13. | HCC28 | 23.6 | 23.4 |
| 14. | HCC29 | 28 | 29.8 |
| 15. | HCC30 | 54 | 37.2 |
| 16. | HCC31 | 13 | 20.6 |
| 17. | HCC34 | 36 | 39 |
| 18. | HCC35 | 42 | 36.2 |
| 19. | HCC36 | 13 | 15 |
| 20. | HCC37 | 14 | 16 |
| 21. | HCC38 | 19 | 16 |
| 22. | HCC39 | 33 | 32.6 |
| 23. | HCC42 | 38 | 27.6 |
| 24. | HCC45 | 21 | 16 |
| 25. | HCC46 | 23 | 21.8 |
| 26. | HCC47 | 42 | 23.8 |
| 27. | HCC49 | 36 | 21.6 |
| 28. | HCC51 | 13 | 13.5 |
| 29. | HCC52 | 8 | 11.4 |
| 30. | HCC54 | 37 | 23.4 |
| 31. | HCC55 | 30.4 | 21 |
| 32. | HCC56 | 30.2 | 27 |
| 33. | HCC57 | 25.6 | 17.2 |
| 34. | HCC58 | 16 | 23.3 |
| 35. | HCC59 | 23 | 12 |
| 36. | HCC60 | 10 | 8 |
| 37. | HCC61 | 19 | 12 |
| 38. | HCC9 | 21.8 | 17.2 |
| 39. | HCC7 | 25.8 | 22 |
| 40. | HCC17 | 24 | 13 |

**Paired Sample Statistics**

**Table 8:** Statistical Analysis of the change in Total Cholestrol

| Pair 1 | Mean | N | Std. Deviation | S.E. Mean |
|---|---|---|---|---|
| Before | 257.75 | 40 | 35.13 | 5.55 |
| After | 177.72 | 40 | 22.15 | 3.50 |

**Table 9:** Paired Samples Correlations

| | | N | Correlation | Sig. |
|---|---|---|---|---|
| Pair 1 | Before & After | 40 | .80 | .602 |

**Table 10:** Paired Sample Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 Before - After | 80.03 | 39.91 | 6.31 | 67.26 | 92.79 | 12.68 | 39 | .000 |

**Paired Sample Statistics**

**Table 11:** Statistical Analysis of the change in Plasma Triglyceride

| | Mean | N | Std. Deviation | S.E. Mean |
|---|---|---|---|---|
| Pair 1 Before - After | 190.60 | 40 | 109.46 | 17.31 |
| | 123.00 | 40 | 51.52 | 8.15 |

**Table 12:** Paired Samples Correlations

| | | N | Correlation | Sig. |
|---|---|---|---|---|
| Pair 1 | Before & After | 40 | .78 | .000 |

**Table 13:** Paired Sample Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 Before - After | 67.60 | 76.77 | 12.14 | 43.05 | 92.15 | 5.57 | 39 | .000 |

**Paired Sample Statistics**

**Table 14:** Statistical Analysis of the change in Low Density Lipoprotein

| | Mean | N | Std. Deviation | S.E. Mean |
|---|---|---|---|---|
| Pair 1 Before | 148.07 | 40 | 36.27 | 5,73 |
| After | 100.84 | 40 | 14.81 | 2.34 |

**Table 15:** Paired Samples Correlations

| | | N | Correlation | Sig. |
|---|---|---|---|---|
| Pair 1 | Before & After | 40 | .06 | .720 |

**Table 16:** Paired Sample Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 Before - After | 47.23 | 38.36 | 6.07 | 34.97 | 59.50 | 7.79 | 39 | .000 |

**Paired Sample Statistics**

**Table 17:** Statistical Analysis of the change in High Density Lipoprotein

| | Mean | N | Std. Deviation | S.E. Mean |
|---|---|---|---|---|
| Pair 1 Before | 49.08 | 40 | 9.15 | 1.45 |
| After | 47.63 | 40 | 6.32 | 1.00 |

**Table 18:** Paired Samples Correlations

| | | N | Correlation | Sig. |
|---|---|---|---|---|
| Pair 1 | Before & After | 40 | .55 | .000 |

**Table 19:** Paired Sample Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 Before - After | 1.45 | 7.78 | 1.23 | -1.04 | 3.94 | 1.18 | 39 | .245 |

**Paired Sample Statistics**

**Table 20:** Statistical Analysis of the change inVery Low Density Lipoprotein

| | Mean | N | Std. Deviation | S.E. Mean |
|---|---|---|---|---|
| Pair 1 Before - After | 29.46 | 40 | 24.84 | 3.93 |
| | 22.85 | 40 | 13.27 | 2.10 |

**Table 21:** Paired Samples Correlations

| | | N | Correlation | Sig. |
|---|---|---|---|---|
| Pair 1 | Before & After | 40 | .91 | .000 |

**Table 22:** Paired Sample Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 Before - After | 6.61 | 13.91 | 2.20 | 2.16 | 11.06 | 3.00 | 39 | .005 |

## Conclusion

Hyperlipidemia is the abnormally elevated levels of any or all lipids or lipoproteins in the blood. Due to the alarming rate of the patients, medical professionals are implementing strategies for the management of this condition. Green tea that is been widely used as a drink has its own medicinal property.

This study was designed to Homeopathically give Camellia Sinensis 3x to the patients having increased Cholesterol levels and evaluate whether it has got the cholesterol lowering effect. After this study it can be stated that Camellia sinensis 3x can bring significant changes in

Total Cholesterol, Plasma Triglyceride and Low Density Lipoprotein. But it fails in bringing significant in High Density Lipoprotein and Very Low Density Lipoprotein.

It is highly recommended to expand this research work with further vast and deeper study with a control group under favorable conditions and more scientific parameters.

## Acknowledgments

I, Acknowledge the help of Father muller Research Centre, Community Medicine department, FMHMC, the patients and the Laboratory technicians for the timely help and cooperation.

## Author's Contribution

Not available

## Conflict of Interest

Not available

## Financial Support

Not available

## References

1. Dyslipidemia - Endocrine and Metabolic Disorders - MSD Manual Professional Edition [Internet]. [cited 2023 Feb 12]. Available from: https://www.msdmanuals.com/en-in/professional/endocrine-and-metabolic-disorders/lipid-disorders/dyslipidemia?query=hyperlipidemia
2. Maron DJ, Lu GP, Cai NS, Wu ZG, Li YH, Chen H, *et al*. Cholesterol-lowering effect of a theaflavin-enriched green tea extract: a randomized controlled trial. Arch Intern Med [Internet]. [Cited 2023 Feb 12]. 2003 Jul 23;163(12):1448–53. Available from: https://pubmed.ncbi.nlm.nih.gov/12824094/
3. What's the Difference between Green Tea & Black Tea? Which is better? [Internet]. [Cited 2023 Feb 12]. Available from: https://tea101.teabox.com/black-tea-or-green-tea
4. Hsu CH, Tsai TH, Kao YH, Hwang KC, Tseng TY, Chou P. Effect of green tea extract on obese women: a randomized, double-blind, placebo-controlled clinical trial. Clin Nutr [Internet]. [Cited 2023 Feb 12] 2008 Jun;27(3):363–70. Available from: https://pubmed.ncbi.nlm.nih.gov/18468736/
5. Hirsova P, Kolouchova G, Dolezelova E, Cermanova J, Hyspler R, Kadova Z, *et al*. Epigallocatechin gallate enhances biliary cholesterol secretion in healthy rats and lowers plasma and liver cholesterol in ethinylestradiol-treated rats. Eur J Pharmacol [Internet]. [cited 2023 Feb 12]. 2012 Sep 15;691(1-3):38–45. Available from: https://pubmed.ncbi.nlm.nih.gov/22771784/
6. Löest HB, Noh SK, Koo SI. Green tea extract inhibits the lymphatic absorption of cholesterol and α-tocopherol in ovariectomized rats. J Nutr. 2002;132(6):1282–8.
7. Aphorism 261-270 - The Organon [Internet]. [cited 2023 Feb 20]. Available from: https://www.homeopathyschool.com/the-school/editorial/the-organon/aphorism-261-270/

**How to Cite This Article**
Salini Mandal BG, Vidiera P. A pilot study to evaluate the cholesterol lowering effect in camellia sinensis 3x. International Journal of Homoeopathic Sciences. 2023;7(1):340-347.