|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Biochemical markers  (mean ± SD) | Genotypes | Healthy Eating Index -2015 | | | P\* | P† |
| T1 | T2 | T3 |
| BMI | TT | 30.14 ± 4.85 | 29.29 ± 4.21 | 28.54 ± 4.71 | < 0.001 | < 0.001 |
| CC | 30.01 ± 4.55 | 27.76 ± 3.89 | 29.69 ± 4.81 |
| TC | 29.81 ± 4.86 | 29.55 ± 5.32 | 28.82 ± 4.17 |
| WC | TT | 93.82 ± 10.19 | 92.43 ± 10.65 | 90.38 ± 10.05 | < 0.001 | < 0.001 |
| CC | 92.30 ± 10.63 | 93.42 ± 15.39 | 92.49 ± 9.97 |
| TC | 94.07 ± 10.36 | 91.63 ± 11.18 | 90.94 ± 9.49 |
| LDL | TT | 102.03 ± 30.88 | 103.78 ± 31.67 | 115.04 ± 36.41 | < 0.001 | < 0.001 |
| CC | 111.28 ± 36.54 | 101.92 ± 33.64 | 105.03 ± 0.03 |
| TC | 103.57 ± 35.64 | 109.83 ± 33.97 | 113.27 ± 41.04 |
| HDL | TT | 50.10 ± 11.53 | 53.57 ± 10.55 | 55.04 ± 13.64 | < 0.001 | < 0.001 |
| CC | 51.84 ± 12.30 | 51.50 ± 13.26 | 54.70 ± 13.34 |
| TC | 52.34 ± 13.55 | 54.05 ± 12.44 | 54.63 ± 12.82 |
| Cholesterol | TT | 212.96 ± 81.81 | 195.75 ± 71.45 | 200.60 ± 54.57 | < 0.001 | < 0.001 |
| CC | 174.28 ± 54.13 | 210 ± 145.88 | 180 ± 40.35 |
| TC | 186.58 ± 56.74 | 204.82 ± 80.52 | 205 ± 80.66 |
| TG | TT | 193.01 ± 111.65 | 190.08 ± 101.79 | 171.61 ± 99.94 | < 0.001 | < 0.001 |
| CC | 158.21 ± 121.65 | 165.46 ± 99.02 | 171.08 ± 115.63 |
| TC | 187.60 ± 122.19 | 186.45 ± 89.71 | 197.98 ± 113.33 |
| Leptin | TT | 23.56 ± 12.13 | 24.29 ± 15.27 | 25.40 ± 14.42 | < 0.001 | 0.03 |
| CC | 25.52 ± 9.75 | 21.50 ± 14.49 | 27.10 ± 14.87 |
| TC | 21.59 ± 15 | 25.31 ± 14.70 | 28.37 ± 17.72 |
| Hs-CRP | TT | 1.59 ± 1 | 1.77 ± 1.35 | 2.15 ± 1.36 | < 0.001 | 0.06 |
| CC | 2.76 ± 1.87 | 3.24 ± 1.49 | 2.69 ± 1.64 |
| TC | 2.22 ± 1.56 | 1.96 ± 1.33 | 2.13 ± 1.42 |
| PTX3 | TT | 2.77 ± 0.32 | 2.95 ± 0.47 | 2.73 ± 0.56 | < 0.001 | < 0.001 |
| CC | 2.57 ± 0.45 | 2.48 ± 0.50 | 2.50 ± 0.46 |
| TC | 2.54 ± 0.37 | 2.58 ± 0.37 | 2.45 ± 0.60 |
| IL – 18 | TT | 249.95 ± 41.88 | 254.41 ± 29.54 | 239.11 ± 26.29 | < 0.001 | < 0.001 |
| CC | 254.31 ± 26.43 | 244.94 ± 26.37 | 254.14 ± 30 |
| TC | 255.26 ± 31.55 | 242.39 ± 28.05 | 246.98 ± 32.89 |
| TAC | TT | 2.66 ± 0.63 | 2.48 ± 0.52 | 2.37 ± 0.52 | < 0.001 | < 0.001 |
| CC | 2.32 ± 0.39 | 2.46 ± 0.66 | 2.34 ± 0.54 |
| TC | 2.47 ± 0.51 | 2.62 ± 0.62 | 2.55 ± 0.61 |
| SOD | TT | 0.15 ± 0.05 | 0.14 ± 0.04 | 0.15 ± 0.05 | < 0.001 | < 0.001 |
| CC | 0.11 ± 0.03 | 0.12 ± 0.03 | 0.13 ± 0.04 |
| TC | 0.19 ± 0.06 | 0.16 ± 0.03 | 0.15 ± 0.03 |
| PGF2α | TT | 71.02 ± 6.04 | 72 ± 6.61 | 71.92 ± 5.31 | < 0.001 | < 0.001 |
| CC | 74.75 ± 7.39 | 72.03 ± 6.09 | 77 ± 5.48 |
| TC | 71.75 ± 3.11 | 71.02 ± 6.42 | 70.85 ± 4.94 |

Table 1. Interaction between APOA2 −265T>C polymorphism and HEI-2015 on laboratory parameters.

SD = Standard Deviation, WC = Waist Circumferences, BMI = Body Mass Index, HDL-C = High Density Lipoprotein Cholesterol, LDL-C = Low Density Lipoprotein, TG = Triglyceride, hs-CRP = C-Reactive Protein, PTX3 = Pentraxin 3, IL-18 = Interleukin 18, TAC = Total Antioxidant Capacity, SOD = Superoxide Dismutase, PGF2α = Prostaglandin F2α

\*P for unadjusted interaction that obtained from multivariate models using ANCOVA

†P for adjusted interaction obtained from multivariate models using ANCOVA. Adjusted for age, gender, physical activity, smoking, and alcohol intake

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Biochemical markers  (mean ± SD) | Genotypes | Dietary Phytochemical Index | | | P\* | P† |
| T1 | T2 | T3 |
| BMI | TT | 29.51 ± 4.35 | 29.74 ± 28.63 | 28.63 ± 4.87 | < 0.001 | < 0.001 |
| CC | 28.62 ± 3.30 | 28.39 ± 4.30 | 30.46 ± 5.29 |
| TC | 29.57 ± 4.60 | 29.50 ± 4.71 | 28.73 ± 4.65 |
| WC | TT | 92.70 ± 10.64 | 92.66 ± 9.55 | 91.11 ± 10.90 | < 0.001 | < 0.001 |
| CC | 93.44 ± 8.36 | 91 ± 8.47 | 93.71 ± 15.80 |
| TC | 92.07 ± 10.93 | 93.33 ± 9.79 | 91.14 ± 10.09 |
| LDL | TT | 110.63 ± 29.60 | 102.95 ± 34.12 | 107.93 ± 36.86 | < 0.001 | < 0.001 |
| CC | 102.52 ± 30.47 | 109.43 ± 41.53 | 105.24 ± 34.97 |
| TC | 104.44 ± 29.95 | 103.05 ± 32.78 | 114.46 ± 37.99 |
| HDL | TT | 54.36 ± 14.38 | 51.95 ± 10.71 | 52.35 ± 10.93 | < 0.001 | < 0.001 |
| CC | 51.48 ± 12.69 | 53.30 ± 13.65 | 53.73 ± 12.81 |
| TC | 53.94 ± 14.02 | 50.48 ± 9.84 | 53.98 ± 11.31 |
| Cholesterol | TT | 212.24 ± 82.62 | 200.29 ± 65.33 | 196.76 ± 58.90 | < 0.001 | < 0.001 |
| CC | 187.70 ± 142.47 | 184.41 ± 46.60 | 187.56 ± 58.46 |
| TC | 207.28 ± 76.79 | 196.52 ± 63.94 | 205.04 ± 66.86 |
| TG | TT | 203.59 ± 112.87 | 168.82 ± 90.14 | 181.95 ± 108.67 | < 0.001 | < 0.001 |
| CC | 179.57 ± 146.82 | 163.07 ± 82.70 | 158.38 ± 108.39 |
| TC | 194.23 ± 107.08 | 181.33 ± 99.99 | 176.14 ± 105.69 |
| Hs-CRP | TT | 1.73 ± 1.03 | 2.02 ± 1.44 | 1.75 ± 1.26 | < 0.001 | 0.004 |
| CC | 3.25 ± 1.57 | 2.25 ± 1.80 | 3.35 ± 1.41 |
| TC | 1.52 ± 1.28 | 1.91 ± 1.14 | 1.99 ± 1.26 |
| PTX3 | TT | 2.80 ± 0.35 | 2.86 ± 0.29 | 2.79 ± 0.61 | < 0.001 | < 0.001 |
| CC | 2.35 ± 0.49 | 2.71 ± 0.41 | 2.42 ± 0.43 |
| TC | 2.76 ± 0.34 | 2.97 ± 0.47 | 2.77 ± 0.54 |
| IL – 18 | TT | 242.96 ± 41.51 | 251.19 ± 34.20 | 248.76 ± 27.78 | < 0.001 | < 0.001 |
| CC | 253.01 ± 24.83 | 250.14 ± 30.78 | 252.25 ± 26.73 |
| TC | 247.79 ± 30.76 | 251.02 ± 49.07 | 246.75 ± 22.21 |
| TAC | TT | 2.49 ± 0.55 | 2.4 ± 0.49 | 2.61 ± 0.63 | < 0.001 | < 0.001 |
| CC | 2.29 ± 0.41 | 2.47 ± 0.63 | 2.29 ± 0.48 |
| TC | 2.62 ± 0.67 | 2.29 ± 0.43 | 2.60 ± 2.53 |
| SOD | TT | 0.15 ± 0.05 | 0.14 ± 0.06 | 0.15 ± 0.04 | < 0.001 | < 0.001 |
| CC | 0.12 ± 0.04 | 0.12 ± 0.03 | 0.11 ± 0.03 |
| TC | 0.15 ± 0.04 | 0.17 ± 0.06 | 0.14 ± 0.04 |
| PGF2α | TT | 71.12 ± 5.34 | 72.65 ± 5.35 | 71.21 ± 6.80 | < 0.001 | < 0.001 |
| CC | 76.36 ± 5.36 | 73.26 ± 7.17 | 75.45 ± 6.60 |
| TC | 73.45 ± 4.70 | 70.28 ± 7.54 | 70.76 ± 5.56 |

Table 2. Interaction between APOA2 −265T>C polymorphism and DPI on laboratory parameters.

SD = Standard Deviation, WC = Waist Circumferences, BMI = Body Mass Index, HDL-C = High Density Lipoprotein Cholesterol, LDL-C = Low Density Lipoprotein, TG = Triglyceride, hs-CRP = C-Reactive Protein, PTX3 = Pentraxin 3, IL-18 = Interleukin 18, TAC = Total Antioxidant Capacity, SOD = Superoxide Dismutase, PGF2α = Prostaglandin F2α

\*P for unadjusted interaction that obtained from multivariate models using ANCOVA

†P for adjusted interaction obtained from multivariate models using ANCOVA. Adjusted for age, gender, physical activity, smoking, and alcohol intake

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| --- | --- | --- | --- | --- | --- | --- |
| Biochemical markers  (mean ± SD) | Genotypes | Dietary Quality Index-International | | | P\* | P† |
| T1 | T2 | T3 |
| BMI | TT | 29.57 ± 4.60 | 29.50 ± 4.71 | 28.73 ± 4.65 | < 0.001 | < 0.001 |
| CC | 29.80 ± 3.77 | 29.73 ± 4.86 | 28.50 ± 4.79 |
| TC | 29.84 ± 5.35 | 29.09 ± 4.37 | 29.24 ± 4.40 |
| WC | TT | 92.07 ± 10.94 | 93.33 ± 9.79 | 91.14 ± 10.09 | < 0.001 | < 0.001 |
| CC | 92.92 ± 9.96 | 92.17 ± 10.37 | 92.94 ± 13.99 |
| TC | 92.68 ± 11.49 | 92.06 ± 10.05 | 91.85 ± 9.67 |
| LDL | TT | 104.44 ± 29.95 | 103.05 ± 32.78 | 114.56 ± 37.99 | < 0.001 | < 0.001 |
| CC | 109.21 ± 38.49 | 111.41 ± 32.36 | 99.47 ± 36.97 |
| TC | 110.05 ± 34.83 | 107.07 ± 34.22 | 107.83 ± 40.17 |
| HDL | TT | 53.94 ± 14.02 | 50.48 ± 9.84 | 53.98 ± 11.31 | < 0.001 | < 0.001 |
| CC | 50.50 ± 12.49 | 54.70 ± 13.34 | 53.34 ± 13.10 |
| TC | 54.48 ± 13.10 | 53.95 ± 13.33 | 52.25 ± 12.29 |
| Cholesterol | TT | 207.28 ± 76.78 | 196.52 ± 63.94 | 205.04 ± 66.86 | < 0.001 | < 0.001 |
| CC | 172.92 ± 41.73 | 192.82 ± 57.32 | 191.24 ± 122.70 |
| TC | 201.12 ± 65.94 | 193.53 ± 58.25 | 200.34 ± 93.69 |
| TG | TT | 194.23 ± 107.08 | 181.33 ± 99.99 | 176.14 ± 105.69 | < 0.001 | < 0.001 |
| CC | 174.78 ± 140.76 | 163.48 ± 86.55 | 161.56 ± 110.51 |
| TC | 192.14 ± 109.29 | 184.87 ± 107.75 | 192.79 ± 108.94 |
| Hs-CRP | TT | 1.52 ± 1.28 | 1.91 ± 1.14 | 1.99 ± 1.26 | < 0.001 | < 0.001 |
| CC | 1.75 ± 1.77 | 3.10 ± 1.60 | 3.33 ± 1.43 |
| TC | 2.52 ± 1.25 | 1.61 ± 1.42 | 2 ± 1.45 |
| PTX3 | TT | 2.76 ± 0.34 | 2.97 ± 0.47 | 2.77 ± 0.54 | < 0.001 | < 0.001 |
| CC | 2.43 ± 0.46 | 2.49 ± 0.51 | 2.61 ± 0.41 |
| TC | 2.55 ± 0.36 | 2.53 ± 0.37 | 2.49 ± 0.61 |
| IL – 18 | TT | 247.79 ± 30.76 | 251.02 ± 49.07 | 246.75 ± 22.21 | < 0.001 | < 0.001 |
| CC | 265.19 ± 24.54 | 248.70 ± 27.47 | 246.15 ± 27.85 |
| TC | 256.55 ± 29.61 | 240.45 ± 28.11 | 242.61 ± 32.22 |
| TAC | TT | 2.62 ± 0.67 | 2.29 ± 0.43 | 2.60 ± 0.50 | < 0.001 | < 0.001 |
| CC | 2.41 ± 0.56 | 2.39 ± 0.53 | 2.32 ± 0.53 |
| TC | 2.47 ± 0.56 | 2.72 ± 0.68 | 2.53 ± 0.55 |
| SOD | TT | 0.15 ± 0.04 | 0.17 ± 0.06 | 0.14 ± 0.04 | < 0.001 | < 0.001 |
| CC | 0.12 ± 0.03 | 0.11 ± 0.03 | 0.13 ± 0.04 |
| TC | 0.17 ± 0.06 | 0.17 ± 0.03 | 0.16 ± 0.04 |
| PGF2α | TT | 73.45 ± 4.70 | 70.28 ± 7.54 | 70.79 ± 5.56 | < 0.001 | < 0.001 |
| CC | 73 ± 7.43 | 74.86 ± 7.39 | 75.79 ± 5.07 |
| TC | 71 ± 4.15 | 69.36 ± 5.02 | 72.48 ± 6 |

Table 3. Interaction between APOA2 −265T>C polymorphism and DQI-I on laboratory parameters.

SD = Standard Deviation, WC = Waist Circumferences, BMI = Body Mass Index, HDL-C = High Density Lipoprotein Cholesterol, LDL-C = Low Density Lipoprotein, TG = Triglyceride, hs-CRP = C-Reactive Protein, PTX3 = Pentraxin 3, IL-18 = Interleukin 18, TAC = Total Antioxidant Capacity, SOD = Superoxide Dismutase, PGF2α = Prostaglandin F2α

\*P for unadjusted interaction that obtained from multivariate models using ANCOVA

†P for adjusted interaction obtained from multivariate models using ANCOVA. Adjusted for age, gender, physical activity, smoking, and alcohol intake