**Supplemental Table 1.** Clinical characteristics of the study population

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| --- | --- | --- | --- |
| Vitamin B12 deficiencya |  | Normal vitamin B12 | p-value |
| Number (%) | 121 (10.9) |  | 990 (89.1) |  |
| Age (years) | 61.8 ± 10.9 |  | 59.2 ± 10.9 | .031 |
| Male (%) | 81 (66.9) |  | 564 (57.0) | .058 |
| Diabetes duration (years) | 13.1 ± 7.5 |  | 10.2 ± 6.8 | < .001 |
| BMI (kg/m2) | 26.4 ± 3.7 |  | 26.1 ± 4.0 | .412 |
| Alcohol > 98 g/week (%)  | 36 (29.8) |  | 181 (18.3) | .027 |
| Current smoker (%) | 29 (24.0) |  | 188 (19.0) | .473 |
| Cardiovascular diseaseb(%) | 27 (22.3) |  | 137 (13.8) | .066 |
| Diabetic retinopathy (%) | 32 (32.0) |  | 140 (19.0) | .030 |
| Systolic BP (mmHg) | 131.0 ± 12.9 |  | 128.6 ± 12.3 | .065 |
| Diastolic BP (mmHg) | 77.2 ± 11.3 |  | 77.1 ± 9.4 | .998 |
| Hypertension (%) | 93 (76.9) |  | 660 (66.7) | .044 |
| Anemiac (%) | 27 (22.3) |  | 138 (13.9) | .042 |
| Neuropathyd (%) | 36 (29.8) |  | 210 (21.7) | .101 |
| Fasting glucose (mg/dL) | 139.2 ± 36.6 |  | 138.8 ± 37.2 | .913 |
| Hemoglobin A1c (%) | 7.2 ± 1.0 |  | 7.2 ± 1.0 | .768 |
| HOMA-IR | 1.1 ± 1.0 |  | 1.2 ± 2.4 | .852 |
| Hemoglobin (g/dL) | 13.6 ± 1.7 |  | 13.8 ± 1.7 | .246 |
| MCV (fL) | 91.4 ± 4.5 |  | 91.4 ± 27.6 | .994 |
| Total cholesterol (mg/dL) | 142.8 ± 26.3 |  | 146.3 ± 26.0 | .203 |
| Triglyceride (mg/dL) | 140.5 ± 80.1 |  | 137.6 ± 69.7 | .700 |
| HDL-cholesterol (mg/dL) | 44.5 ± 9.4 |  | 46.0 ± 10.9 | .201 |
| LDL-cholesterol (mg/dL) | 76.5 ± 22.5 |  | 77.4 ± 22.4 | .713 |
| AST (IU/L) | 26.0 ± 11.3 |  | 27.8 ± 12.4 | .181 |
| ALT (IU/L) | 22.3 ± 12.2 |  | 27.6 ± 16.2 | < .001 |
| Creatinine (mg/dL) | 0.98 ± 0.19 |  | 0.95 ± 0.31 | .384 |
| eGFR (mL/min/1.73m2) | 77.0 ± 16.6 |  | 80.5 ± 17.1 | .063 |
| uACR ≥ 30 μg/mg Cr (%) | 37 (31.2) |  | 210 (22.3) | .191 |
| Vitamin B12 (pg/mL) | 214.6 ± 46.1 |  | 512.9 ± 258.0 | < .001 |
| Folate (ng/mL) | 12.8 ± 8.9 |  | 14.4 ± 10.5 | .630 |
| Homocysteine (μmol/L) | 16.9 ± 4.5 |  | 10.6 ± 3.5 | < .001 |
| Multivitamin agents (%) | 6 (5.0) |  | 165 (17.6) | < .001 |
| Metformin duration (years)  | 12.9 ± 7.6 |  | 9.8 ± 6.9 | < .001 |
|  < 10 | 44 (36.4) |  | 546 (55.2) | < .001 |
|  10- < 20  | 54 (44.6) |  | 352 (35.6) |  |
|  ≥ 20 | 23 (19.0) |  | 92 (9.3) |  |
| Metformin dose (mg/day) | 1,573 ± 421 |  | 1,317 ± 478 | < .001 |
| < 1,000 | 8 (6.6) |  | 215 (21.7) | < .001 |
| 1,000- < 1,500 | 18 (14.9) |  | 234 (23.6)  |  |
| 1,500- < 2,000 | 59 (48.8) |  | 396 (40.0) |  |
| ≥ 2,000 | 36 (29.8) |  | 145 (14.6) |  |

Data are presented as mean ± standard deviation (SD) or number (%); a= vitamin B12 deficiency was defined as serum B12 < 300 pg/mL, accompanied serum homocysteine > 13.7 μmol/L; b = having recorded percutaneous coronary intervention or coronary bypass surgery, percutaneous transluminal angioplasty for peripheral arterial occlusive disease, or stroke, confirmed by a neurologist; c= Hemoglobin < 13 g/dL for men, < 12 g/dL for women (WHO guidelines); d= Previous neuropathy was diagnosed, or MNSI > 2; BMI, body mass index; BP, blood pressure; HOMA-IR, the homeostasis model of assessment-insulin resistance; MCV, Mean corpuscular volume; fL, femtolite; HDL, high-density lipoprotein; LDL, low-density lipoprotein; AST, aspartate aminotransferase; ALT, alanine aminotransferase; GFR, glomerular filtration rate; ACR, albumin-to-creatinine ratio.