Table S1. Specific codes used for the cardiovascular outcomes from the relevant registries.

|  |  |
| --- | --- |
| Ischemic heart disease | ICD-8/9 codes 410-414; ICD-10 codes I20–I25Nordic Classification of Surgical Procedure codes TFN 40, 50 , FN1AT, FN1BT, FN1YT, FNF, FNG, FNA, FNB, FNC, FND, FNE, before 1996: 5311-5315 |
| Any strokeIschemic stroke | ICD-8/9 codes 430-434; ICD-10 codes I60-I64ICD-8/9 codes 433, 434; ICD-10 code I63 |
| Amputations of lower extremityaRevascularization of lower extremityb | ICD-8 codes N895, N896, N897ICD-10 codes S78,S88,S98, T053-T056Nordic Classification of Surgical Procedure codes NFQ10,20, NGQ10,20, NHQ10,20,30,40,48 before 1996: 9571-75Nordic Classification of Surgical Procedure codes PDF05, 20-22; PDH50-55, 99; PDN05, 20-22; PDW99; PEF23-25; PEH 56,57; PEN 23-25; PEW99; PGH41-47,49; PFH58-67; PDQ05, 20-22; PD1AT; PD1BT; PD1YT; PD3AT; PD3BT;PEQ23-25; PEQ99; PE1AT; PE1BT; PFQ26; PFQ99; PF1AT; PF1BTbefore 1996: 9575, 5561-5568, 5579, 5581, 5583 |

Table S2. IHD risk of ABO blood groups stratified by nephropathy stages

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | O | A | B | AB |
| Normoalbuminuria, HR (95% CI)n | 1.0 | 1.00 (0.77-1.31) |
| 1.0(862) | 0.94 (0.72-1.23)(1311) | 1.00 (0.71-1.41)(505) | 1.41 (0.94-2.10)(253) |
| Microalbuminuria, HR (95% CI)n | 1.0 | 1.81 (1.15-2.84) \* |
| 1.0(178) | 1.93 (1.24-3.00) \*(251) | 1.53 (0.87-2.68)(109) | 1.37 (0.62-3.02)(44) |
| Macroalbuminuria, HR (95% CI)n | 1.0 | 0.83 (0.62-1.11) |
| 1.0(199) | 0.85 (0.62-1.17)(272) | 1.03 (0.72-1.48)(124) | 0.67 (0.41-1.10)(55) |
| ESRD, HR (95% CI)n | 1.0 | 0.95 (0.62-1.45) |
| 1.0(94) | 0.95 (0.60-1.53)(178) | 0.99 (0.57-1.71)(58) | 0.92 (0.47-1.82)(38) |

O-blood-group is the reference group 1.0. HR: hazard ratio; CI: confidence interval; Analysis were adjusted for age at diabetes diagnosis, duration of diabetes, body mass index, systolic blood pressure, HDL cholesterol, triglycerides, HbA1c, sex, severe diabetic retinopathy (laser treatment) and smoking. \*p < 0.05 compared to the reference group.

Table S3. Comparison between individuals with normo and microalbuminuria with A-blood-group

|  |  |  |  |
| --- | --- | --- | --- |
|   | Normoalbuminurian=1311 | Microalbuminurian=251 | pvalue |
| IHD incident (n,%) | 139 (10.9) | 71 (29.3) | <0.0001 |
| FUT2 Secretor (%) | 82.2 | 82.8 | 0.82 |
| Hs-CRP (mg/l) | 1.71 (0.98-3.58) | 2.51 (1.26-5.33) | < 0.0001 |
| Antibiotic purchases per person year | 0.47 (0.23-0.95) | 0.78 (0.36-1.75) | < 0.0001 |
| A1A1 (%) | 10.0 | 10.8 |   0.87 |
| A1A2 (%) | 10.1 | 11.2 |
| A1O (%) | 52.4 | 48.6 |
| A2A2 (%) | 2.7 | 2.8 |
| A2O (%) | 24.8 | 26.5 |

Data are shown as percentage or median and interquartile range. P-value refers to χ2-test or Kruskal-Wallis test. IHD: ischemic heart disease; FUT2: fucosyltransferase-2; Hs-CRP:  high-sensitivity C-reactive protein.

Table S4. Ischemic stroke risk of ABO blood groups stratified by nephropathy stages.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | O | A | B | AB |
| Normoalbuminuria, HR (95% CI) | 1.0 | 1.59 (0.95-2.66) |
| 1.0 | 1.60 (0.93-2.76) | 1.51 (0.77-2.95) | 1.74 (0.76-4.00) |
| Microalbuminuria, HR (95% CI) | 1.0 | 1.11 (0.61-2.01)  |
| 1.0 | 1.02 (0.53-1.96)  | 1.65 (0.79-3.45) | 0.49 (0.11-2.16) |
| Macroalbuminuria, HR (95% CI) | 1.0 | 1.12 (0.70-1.79) |
| 1.0 | 0.89 (0.52-1.52) | 1.64 (0.93-2.89) | 1.09 (0.50-2.35) |
| ESRD, HR (95% CI) | 1.0 | 0.94 (0.50-1.76) |
| 1.0 | 1.05 (0.54-2.04) | 1.00 (0.42-2.35) | 0.47 (0.13-1.69) |

O-blood-group is the reference group 1.0. HR: hazard ratio; CI: confidence interval; Analysis were adjusted for age at diabetes diagnosis, duration of diabetes, body mass index, systolic blood pressure, HDL cholesterol, triglycerides, HbA1c, sex, severe diabetic retinopathy (laser treatment) and smoking. p < 0.05 was considered significant for the comparison with the reference group.

Table S5. Peripheral artery disease risk of ABO blood groups stratified by nephropathy stages.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | O | A | B | AB |
| Normoalbuminuria, HR (95% CI) | 1.0 | 1.00 (0.63-1.60) |
| 1.0 | 0.99 (0.60-1.65) | 0.84 (0.42-1.67) | 1.40 (0.63-3.12) |
| Microalbuminuria, HR (95% CI) | 1.0 | 0.86 (0.51-1.45)  |
| 1.0 | 1.00 (0.57-1.75)  | 0.70 (0.33-1.46) | 0.62 (0.21-1.84) |
| Macroalbuminuria, HR (95% CI) | 1.0 | 1.13 (0.77-1.67) |
| 1.0 | 1.10 (0.72-1.69) | 1.10 (0.66-1.84) | 1.30 (0.72-2.36) |
| ESRD, HR (95% CI) | 1.0 | 0.80 (0.49-1.31) |
| 1.0 | 0.67 (0.38-1.16) | 1.21 (0.65-2.25) | 0.73 (0.32-1.63) |

O-blood-group is the reference group 1.0. HR: hazard ratio; CI: confidence interval; Analysis were adjusted for age at diabetes diagnosis, duration of diabetes, body mass index, systolic blood pressure, HDL cholesterol, triglycerides, HbA1c, sex, severe diabetic retinopathy (laser treatment) and smoking. p < 0.05 was considered significant for the comparison with the reference group.

Table S6. List of physicians and nurses at each of the FinnDiane centers participating in patient recruitment and characterization



