**Supplementary Material**

**Exploratory objective**

During the trial period, 3.8% (453/11,849) and 3.6% (426/11,896) of participants in the intervention and control arms respectively in the full analysis population had a COVID-19 diagnosis code recorded in their primary care records. Eight participants in the intervention arm (0.1%) and three in the control arm (<0.1%) had diagnosis codes for both COVID-19 and AF. Of these 11 participants across both arms, five received both diagnoses within a two-week period.

Table S1: Descriptions of analysis populations

|  |  |
| --- | --- |
| **Population** | **Definition** |
| **Intervention arm** | **Control arm** |
| Full analysis population | Participants randomised to the intervention arm whose data were available at the end of the research window (i.e. not lost to follow up) | Participants randomised to the control arm whose data were available at the end of the research window (i.e. not lost to follow up) |
| High-risk population | Participants randomised to the intervention arm with a risk score of ≥7.4% (according to the AF risk prediction algorithm) whose data were available at the end of the research window (i.e. not lost to follow up)  | Participants randomised to the control arm with a risk score of ≥7.4% (according to the AF risk prediction algorithm) whose data were available at the end of the research window (i.e. not lost to follow up) |
| Research clinic population | Participants randomised to the intervention arm with a risk score of ≥7.4% (according to the AF risk prediction algorithm) whose data were available at the end of the research window (i.e. not lost to follow up) and consented to attend the research clinic or had clinic related records in the data extract at the end of the research window | Participants randomised to the control arm with a risk score of ≥7.4% (according to the AF risk prediction algorithm) whose data were available at the end of the research window (i.e. not lost to follow up) and without clinic related records in the data extract at the end of the research window |
| Per protocol population | Participants randomised to the intervention arm with a risk score of ≥7.4% (according to the AF risk prediction algorithm) whose data were available at the end of the research window (i.e. not lost to follow up) and consented to attend the research clinic or had clinic related records in the data extract at the end of the research windowand followed all assessment steps (ECG + KardiaMobile, or ECG only if ECG was positive) per protocol and did not die before the end of the study | Participants randomised to the control arm with a risk score of ≥7.4% (according to the AF risk prediction algorithm) whose data were available at the end of the research window (i.e. not lost to follow up) and without clinic related records in the data extract at the end of the research window and did not die before end of study |

Table S2: Baseline characteristics of the full analysis population stratified by low and high risk of undiagnosed atrial fibrillation status in intervention and control arms

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| --- | --- | --- |
|  | **Intervention** | **Control** |
|  | **Overall****(n=11,849)** | **Low risk****(n=10,943)** | **High risk****(n=906)** | **Overall****(n=11,896)** | **Low risk****(n=10,922)** | **High risk****(n=974)** |
| Age, years | 59.0 (14.1) | 57.4 (13.3) | 78.4 (8.9) | 59.2 (14.2) | 57.5 (13.3) | 78.7 (8.6) |
| Sex |
|  Female | 6,581 (55.5) | 6,172 (56.4) | 409 (45.1) | 6,562 (55.2) | 6,120 (56.0) | 442 (45.4) |
|  Male | 5,268 (44.5) | 4,771 (43.6) | 497 (54.9) | 5,334 (44.8) | 4,802 (44.0) | 532 (54.6) |
| Ethnicity |
|  White | 1,903 (16.1) | 1,709 (15.6) | 194 (21.4) | 1,856 (15.6) | 1,667 (15.3) | 189 (19.4) |
|  Black, Asian, and minority ethnic | 49 (0.4) | 48 (0.4) | 1 (0.1) | 42 (0.4) | 37 (0.3) | 5 (0.5) |
|  Unknown | 9,897 (83.5) | 9,186 (83.9) | 711 (78.7) | 9,998 (84.0) | 9,413 (86.2) | 585 (80.1) |
| Weight, kg | 80.3 (19.0) | 79.6 (18.4) | 89.3 (22.8) | 80.1 (19.1) | 79.3 (18.6) | 88.2 (22.4) |
| Height, m | 168.5 (10.1) | 168.3 (10.0) | 170.9 (11.5) | 168.5 (10.1) | 168.3 (10.0) | 170.2 (11.0) |
| BMI, kg.m2 | 28.3 (6.7) | 28.1 (6.6) | 30.7 (7.2) | 28.2 (6.4) | 28.0 (6.2) | 30.4 (7.6) |
| Systolic blood pressure, mmHg | 130.7 (16.6) | 130.0 (16.2) | 138.9 (18.6) | 130.4 (16.8) | 130.1 (16.6) | 133.2 (19.0) |
| Diastolic blood pressure, mmHg | 78.2 (10.1) | 78.4 (10.0) | 76.6 (10.2) | 78.1 (10.3) | 78.5 (10.2) | 74.2 (10.4) |
| Hypertension | 3,899 (32.9) | 3,193 (29.2) | 618 (68.2) | 4,041 (34.0) | 3,275 (30.0) | 685 (70.3) |
| Smoking status |
|  Non smoker | 6,393 (54.0) | 5,911 (54.0) | 486 (73.3) | 6,341 (53.3) | 5,840 (53.5) | 507 (68.6) |
|  Current smoker | 1,987 (16.8) | 1,932 (17.7) | 13 (2.0) | 1,995 (16.8) | 1,933 (17.7) | 28 (3.8) |
|  Former Smoker | 3,461 (29.2) | 3,093 (28.3) | 164 (24.7) | 3,557 (29.9) | 3,146 (28.8) | 204 (27.6) |
|  Passive smoker | 8 (0.1) | 7 (0.1) | 1 (0.0) | 3 (0.0) | 3 (0.0) | 0 (0.0) |
| Type 1 diabetes mellitus | 229 (1.9) | 198 (1.8) | 31 (3.4) | 209 (1.8) | 180 (1.6) | 29 (3.0) |
| Type 2 diabetes mellitus | 1,238 (10.4) | 1,045 (9.5) | 193 (21.3) | 1,282 (10.8) | 1,089 (10.0) | 193 (19.8) |
| Coronary heart disease | 738 (6.2) | 429 (3.9) | 309 (34.1) | 756 (6.4) | 441 (4.0) | 315 (32.3) |
| Prior myocardial infarction | 269 (2.3) | 184 (1.7) | 85 (9.4) | 274 (2.3) | 163 (1.5) | 111 (11.4) |
| Prior cardiac arrest | 6 (0.1) | 4 (0.0) | 2 (0.2) | 7 (0.1) | 6 (0.1) | 1 (0.1) |
| Heart failure | 96 (0.8) | 32 (0.3) | 64 (7.1) | 140 (1.2) | 58 (0.5) | 82 (8.4) |
| Congestive heart failure | 78 (0.7) | 29 (0.3) | 49 (5.4) | 111 (0.9) | 47 (0.4) | 64 (6.6) |
| Prior transient ischemic attack | 172 (1.5) | 102 (0.9) | 70 (7.7) | 202 (1.7) | 120 (1.1) | 82 (8.4) |
| Left ventricular dysfunction | 27 (0.2) | 7 (0.1) | 20 (2.2) | 46 (0.4) | 18 (0.2) | 28 (2.9) |
| Left ventricular hypertrophy | 36 (0.3) | 23 (0.2) | 13 (1.4) | 43 (0.4) | 28 (0.3) | 15 (1.5) |
| Prior echocardiography, electrocardiogram, Holter monitoring | 66 (0.6) | 55 (0.5) | 11 (1.2) | 76 (0.6) | 57 (0.5) | 19 (2.0) |
| Age is at recorded at baseline, data for continuous variables are based on the most recent record within a 5-year look back period, comorbidities have no time restrictions. For continuous variables numbers represent mean (SD) for categorical variables numbers represent n (%) |

Table S3: Baseline characteristics of the high-risk intervention arm participants stratified by acceptance of invitation to attend the research clinic for diagnostic testing or not

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Attended research clinic****(n=255)** | **Did not attend research clinic****(n=651)** | **p-value\*** |
| Age, years | 76.8 (7.1) | 79.1 (9.5) | <0.001 |
| Sex |
|  Female | 95 (37.3) | 314 (48.2) | 0.003 |
|  Male | 160 (62.8) | 337 (51.8) | 0.003 |
| Ethnicity |
|  White | 59 (23.1) | 135 (20.7) | 0.428 |
|  Black, Asian, and minority ethnic | 0 (0.0) | 1 (0.2) | 0.531 |
|  Unknown | 196 (76.9) | 515 (79.1) | 0.459 |
| Weight, kg | 91.0 (20.3) | 88.6 (23.7) | 0.123 |
| Height, cm | 173.9 (10.0) | 169.6 (11.8) | <0.001 |
| BMI, kg.m2 | 30.2 (6.5) | 30.9 (7.5) | 0.214 |
| Systolic blood pressure, mmHg | 139.8 (17.3) | 138.5 (19.2) | 0.737 |
| Diastolic blood pressure, mmHg | 79.6 (12.7) | 75.1 (8.6) | 0.085 |
| Hypertension | 158 (62.0) | 460 (70.7) | 0.011 |
| Smoking status |
|  Non smoker | 126 (49.4) | 356 (54.7) | 0.153 |
|  Current smoker | 9 (3.5) | 46 (7.1) | 0.045 |
|  Former Smoker | 119 (46.7) | 249 (38.3) | 0.020 |
|  Passive smoker | 1 (0.4) | 0 (0.0) | 0.110 |
| Type 1 diabetes mellitus | 8 (3.1) | 23 (3.5) | 0.768 |
| Type 2 diabetes mellitus | 47 (18.4) | 146 (22.4) | 0.187 |
| Coronary heart disease | 87 (34.1) | 222 (34.1) | 0.996 |
| Prior myocardial infarction | 24 (9.4) | 61 (9.4) | 0.985 |
| Prior cardiac arrest | 0 (0.0) | 2 (0.3) | 0.376 |
| Heart failure | 8 (3.1) | 56 (8.6) | 0.004 |
| Congestive heart failure | 6 (2.4) | 43 (6.6) | 0.011 |
| Prior transient ischemic attack | 21 (8.2) | 49 (7.5) | 0.719 |
| Left ventricular dysfunction | 2 (0.8) | 18 (2.7) | 0.068 |
| Left ventricular hypertrophy | 2 (0.8) | 11 (1.7) | 0.303 |
| Prior echocardiography, electrocardiogram, Holter monitoring | 3 (1.2) | 8 (1.2) | 0.948 |
| \*For continuous variables, p-value is based on a t-test for comparison of means; for categorical values, p-value is based on a chi-squared two-sample test for equality of proportions (without continuity correction). Age is at recorded at baseline, data for continuous variables are based on the most recent record within a 5-year look back period, comorbidities have no time restrictions. For continuous variables numbers represent mean (SD) and for categorical variables numbers represent n (%) |

Table S4: Adjusted sensitivity analysis for diagnoses of atrial fibrillation (AF) only in participants without AF at baseline, stratified by analysis subgroup

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| --- | --- | --- | --- |
| **Population** | **Intervention** | **Control** | **Difference** |
| **N** | **Cases (%)** | **N** | **Cases (%)** | **OR** | **Lower CI** | **Upper CI** | **p-value** |
| Full analysis population | 11,875 | 110 (0.93) | 11,920 | 110 (0.92) | 1.05 | 0.80 | 1.38 | 0.713 |
| High-risk population | 917 | 49 (5.34) | 985 | 50 (5.08) | 1.06 | 0.71 | 1.59 | 0.774 |
| Research clinic population | 260 | 24 (9.23) | 984 | 50 (5.08) | 2.09 | 1.23 | 3.46 | 0.007 |
| Per-protocol population | 152 | 15 (9.87) | 887 | 41 (4.62) | 2.76 | 1.42 | 5.17 | 0.003 |
| CI: 95% confidence interval; OR: odds ratioNote: Participants with atrial flutter or fast atrial tachycardia were excluded from the primary analysis but included in this sensitivity analysis |