|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Clinical Outcomes** | **ICD9** | **ICD10** | **OPCS-4** | **Number of cases** |
| **Ischaemic Heart Disease:**  Angina pectoris, myocardial infarction and complications, other ischaemic heart diseases. | 410 – 414,  429.7 | I20 – I25 | - | Mothers: 3120 (94.32%)  Fathers: 2837 (95.62%) |
| **Other forms of Heart Disease:**  Cardiac arrest. | 428 | I46 | - | Mothers: 98 (2.96%)  Fathers: 60 (2.02%) |
| **Coronary Artery Bypass Graft (CABG)** | - | - | K40 – K48 | Mothers: 13 (0.39%)  Fathers: 17 (0.57%) |
| **Percutaneous Coronary Intervention (PCI)** | - | - | K49, K50, K75 | Mothers: 77 (2.33%)  Fathers: 53 (1.79%) |

**Supplementary Table 1. International Classification of Diseases (ICD) codes used to determine CHD status.** ICD9 codes were used until April 1996 in the hospital records, and until January 2000 in the death registry, replaced then by ICD10 codes. The last column includes the percentage of cases within CHD patients.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Maternal Dataset**  **(n = 12094)** | **Missing** | **p value vs. Maternal 1981 dataset** | **Paternal Dataset**  **(n = 6677)** | **Missing** | **p value vs. Paternal 1981 dataset** |
| **Offs. BW (g)** | 3379.41  ± 410.01 | 0.12% | 0.484 | 3391.19  ± 410.16 | 0.12% | 0.798 |
| **Offs. PW (g)** | 651.58  ± 118.23 | 53.03% | 0.982 | 654.08  ± 120.84 | 45.43% | 0.978 |
| **Offs. PW:BW Ratio** | 0.19  ± 0.03 | 53.08% | 0.760 | 0.19  ± 0.03 | 45.50% | 0.902 |
| **Offs. GA (weeks)** | 39.90  ± 1.28 | 2.54% | 0.335 | 39.90  ± 1.27 | 2.66% | 0.826 |
| **Offs. Sex** | F: 5213 (43.10%)  M: 6881 (56.90%) | 0% | 0.581 | F: 2798 (40.56%)  M: 3969 (59.44%) | 0% | 0.796 |
| **Cumulative CHD** | 2294  (18.97%) | - | < 0.001 | 1988  (39.77%) | - | < 0.001 |
| **CHD Age (y)** | 70.72  ± 9.53 | 1.70% | 0.003 | 69.33  ± 9.23 | 1.60% | < 0.001 |
| **Cumulative Deceased** | 7053  (58.32%) | - | < 0.001 | 4718  (70.66%) | - | < 0.001 |
| **Age at Death (y)** | 78.08  ± 9.52 | 1.70% | < 0.001 | 77.02  ± 8.93 | 1.60% | < 0.001 |
| **HBSIMD** | 1: 3793 (32.63%)  2: 2588 (22.27%)  3: 1428 (12.29%)  4: 1796 (15.45%)  5: 2016 (17.35%) | 3.91% | 0.025 | 1: 1907 (29.45%)  2: 1381 (21.33%)  3: 841 (12.99%)  4: 1021 (15.77%)  5: 1325 (20.46%) | 3.02% | 0.019 |

**Supplementary Table 2. Summary statistics for the additional 1989 maternal and paternal datasets used for the Fine-Gray survival regression.** The p values for the difference in variables between these datasets and the general (1981) datasets used for the rest of the analyses is included. Cells are presented in the format “mean ± standard deviation”, except for the *Offs. Sex*, *Cumulative CHD,* *Cumulative Deceased, and HBSIMD* rows, which include the number and percentage of the total. The *CHD Age* row represents the mean age at the time of CHD “diagnosis” (hospital admission or death). The *HBSIMD* row represents the number of individuals categorised under each quintile of the Scottish Index of Multiple Deprivation (5 meaning least deprived). The *Missing* column refers to the percentage of missing records for each measurement in each dataset. The *Missing* values next to the mean ages of CHD development and death represent the percentage of individuals missing date of birth.

**Supplementary Table 3. Fine-Gray survival analysis of maternal CHD risk accounting for competing risk of death from non-CHD causes.** These analyses used the 1989 dataset. CHD was defined as hospitalisation due to CHD. The *S.H.R.* column represents the subdistribution hazard ratio for the covariate. The *C.I.* column represents the 95% Confidence Interval for the coefficient. The *S.E.* column represents the regression standard error. *Age ’89* refers to the individual “age in 1989” variable. *HBSIMD* refers to the Scottish Index of Multiple Deprivation (higher meaning less deprived).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Fine-Gray Survival Regression of Maternal CHD Risk**  **(CHD hospitalisation with competing risk of death)** | | | | | | |
| **S. H. R.** | **C. I. (α = 0.05)** | | **S. E.** | | **P value** | |
| **Analysis including only Offs. BW (n = 11294)** | | | | | | | |
| **Offs. BW** | 0.926 | (0.886 – 0.968) | | 0.023 | | < 0.001 | |
| **Offs. GA** | 1.011 | (0.977 – 1.047) | | 0.018 | | 0.520 | |
| **Age ‘89** | 1.094 | (1.080 – 1.109) | | 0.007 | | < 0.001 | |
| **HBSIMD** | 0.756 | (0.692 – 0.826) | | 0.045 | | < 0.001 | |
| **Age ’89 \* log(t)** | 0.973 | (0.968 – 0.978) | | 0.003 | | < 0.001 | |
| **HBSIMD \* log(t)** | 1.086 | (1.049 - 1.124) | | 0.018 | | < 0.001 | |
|  |  |  |  | |  | |  | |
| **Analysis including only Offs. PW (n = 5339)** | | | | | | | |
| **Offs. PW** | 1.124 | (0.942 – 1.339) | | 0.090 | | 0.190 | |
| **Offs. GA** | 0.972 | (0.920 – 1.027) | | 0.028 | | 0.310 | |
| **Age ‘89** | 1.118 | (1.088 – 1.150) | | 0.014 | | < 0.001 | |
| **HBSIMD** | 0.672 | (0.575 – 0.785) | | 0.079 | | < 0.001 | |
| **Offs. PW \* log(t)** | 0.973 | (0.909 – 1.040) | | 0.034 | | 0.420 | |
| **Age ’89 \* log(t)** | 0.965 | (0.955 – 0.975) | | 0.005 | | <0.001 | |
| **HBSIMD \* log(t)** | 1.119 | (1.056 – 1.187) | | 0.030 | | < 0.001 | |
|  |  |  |  | |  | |  | |
| **Analysis including Offs. BW and PW (n = 5333)** | | | | | | | |
| **Offs. BW** | 0.882 | (0.809 – 0.961) | | 0.044 | | 0.004 | |
| **Offs. PW** | 1.194 | (0.997 – 1.429) | | 0.092 | | 0.054 | |
| **Offs. GA** | 0.992 | (0.937 – 1.050) | | 0.029 | | 0.780 | |
| **Age ‘89** | 1.119 | (1.089 – 1.150) | | 0.014 | | < 0.001 | |
| **HBSIMD** | 0.675 | (0.577 – 0.789) | | 0.080 | | < 0.001 | |
| **Offs. PW \* log(t)** | 0.973 | (0.909 – 1.040) | | 0.034 | | 0.420 | |
| **Age ’89 \* log(t)** | 0.965 | (0.955 – 0.976) | | 0.005 | | < 0.001 | |
| **HBSIMD \* log(t)** | 1.121 | (1.057 – 1.188) | | 0.030 | | < 0.001 | |
|  |  |  | |  | |  | |
| **Analysis including Offs. PW to BW Ratio (n = 5333)** | | | | | | | |
| **Offs. PW:BW Ratio** | 1.259 | (1.066 – 1.486) | | 0.085 | | 0.007 | |
| **Offs. GA** | 0.983 | (0.931 – 1.038) | | 0.028 | | 0.550 | |
| **Age ‘89** | 1.119 | (1.089 – 1.150) | | 0.014 | | < 0.001 | |
| **HBSIMD** | 0.676 | (0.578 – 0.790) | | 0.080 | | < 0.001 | |
| **Offs. PW:BW Ratio \* log(t)** | 0.952 | (0.894 – 1.015) | | 0.032 | | 0.13 | |
| **Age ’89 \* log(t)** | 0.965 | (0.955 – 0.975) | | 0.005 | | < 0.001 | |
| **HBSIMD \* log(t)** | 1.119 | (1.055 – 1.187) | | 0.030 | | 0.001 | |

**Supplementary Table 4. Fine-Gray survival analysis of paternal CHD risk accounting for competing risk of death from non-CHD causes.** These analyses used the 1989 dataset. CHD was defined as hospitalisation due to CHD. The *S.H.R.* column represents the subdistribution hazard ratio for the covariate. The *C.I.* column represents the 95% Confidence Interval for the coefficient. The *S.E.* column represents the regression standard error. *Age ’89* refers to the individual “age in 1989” variable. *HBSIMD* refers to the Scottish Index of Multiple Deprivation (higher meaning less deprived).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Fine-Gray Survival Regression of Paternal CHD Risk**  **(CHD hospitalisation with competing risk of death)** | | | | | | |
| **S. H. R.** | **C. I. (α = 0.05)** | | | **S. E.** | | **P value** |
| **Analysis including only Offs. BW (n = 6283)** | | | | | | | |
| **Offs. BW** | 0.967 | (0.923 – 1.014) | | | 0.024 | | 0.160 |
| **Offs. GA** | 1.026 | (0.989 – 1.065) | | | 0.019 | | 0.170 |
| **Age ‘89** | 1.002 | (0.996 – 1.008) | | | 0.003 | | 0.420 |
| **HBSIMD** | 0.837 | (0.775 – 0.906) | | | 0.040 | | < 0.001 |
| **HBSIMD \* log(t)** | 1.065 | (1.031 - 1.100) | | | 0.016 | | < 0.001 |
|  |  |  |  |  | |  | | |
| **Analysis including only Offs. PW (n = 3443)** | | | | | | | |
| **Offs. PW** | 0.970 | (0.913 – 1.031) | | | 0.031 | | 0.330 |
| **Offs. GA** | 1.047 | (0.996 – 1.100) | | | 0.026 | | 0.073 |
| **Age ‘89** | 1.011 | (1.001 – 1.020) | | | 0.005 | | 0.027 |
| **HBSIMD** | 0.855 | (0.769 – 0.950) | | | 0.054 | | 0.004 |
| **HBSIMD \* log(t)** | 1.048 | (1.005 – 1.093) | | | 0.021 | | 0.028 |
|  |  |  |  |  | |  | | |
| **Analysis including Offs. BW and PW (n = 3439)** | | | | | | | |
| **Offs. BW** | 0.946 | (0.876 – 1.022) | | | 0.039 | | 0.160 |
| **Offs. PW** | 0.997 | (0.928 – 1.071) | | | 0.037 | | 0.930 |
| **Offs. GA** | 1.056 | (1.003 – 1.111) | | | 0.026 | | 0.037 |
| **Age ‘89** | 1.011 | (1.002 – 1.020) | | | 0.005 | | 0.023 |
| **HBSIMD** | 0.857 | (0.771 – 0.953) | | | 0.054 | | 0.004 |
| **HBSIMD \* log(t)** | 1.048 | (1.005 – 1.093) | | | 0.021 | | 0.028 |
|  |  |  | | |  | |  |
| **Analysis including Offs. PW to BW Ratio (n = 3439)** | | | | | | | |
| **Offs. PW:BW Ratio** | 1.011 | (0.949 – 1.077) | | | 0.032 | | 0.730 |
| **Offs. GA** | 1.046 | (0.995 – 1.100) | | | 0.026 | | 0.080 |
| **Age ‘89** | 1.010 | (1.001 – 1.020) | | | 0.005 | | 0.031 |
| **HBSIMD** | 0.855 | (0.769 – 0.950) | | | 0.054 | | 0.004 |
| **HBSIMD \* log(t)** | 1.048 | (1.005 – 1.093) | | | 0.021 | | 0.028 |

**Supplementary Table 5. Summary statistics for the maternal and paternal subsets with offspring PW available.** The p values for the difference in variables between these subsets and the entire parental datasets is included. Cells are presented in the format “mean ± standard deviation”, except for the *Offs. Sex* and *Cumulative CHD* rows, which include the number and percentage of the total. The *CHD Age* row represents the mean age at the time of CHD “diagnosis” (hospital admission or death). The *HBSIMD* row represents the number of individuals categorised under each quintile of the Scottish Index of Multiple Deprivation (5 meaning least deprived).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Maternal Dataset**  **(n = 13866)** | **Maternal Subset with offs. PW**  **(n = 6235)** | **p value** | **Paternal Dataset**  **(n = 8092)** | **Paternal Subset with offs. PW (n = 4190)** | **p value** |
| **Offs. BW (g)** | 3375.83  ± 412.21 | 3385.33  ± 409.06 | 0.129 | 3389.45  ± 411.60 | 3399.62  ± 407.91 | 0.199 |
| **Offs. GA (weeks)** | 39.89  ± 1.29 | 39.88  ± 1.26 | 0.864 | 39.89  ± 1.28 | 39.87  ± 1.25 | 0.479 |
| **Offs. Sex** | F: 6025 (43.45%)  M: 7841 (56.55%) | F: 2541 (40.75%)  M: 3694 (59.25%) | < 0.001 | F: 3300 (40.78%)  M: 4792 (59.22%) | F: 1648 (39.33%)  M: 2542 (60.67%) | 0.120 |
| **Cumulative CHD** | 3308  (23.86%) | 1212  (19.44%) | < 0.001 | 2967  (36.67%) | 1449  (34.58%) | 0.022 |
| **CHD Age (y)** | 69.92  ± 10.70 | 66.43  ± 10.41 | < 0.001 | 67.68  ± 10.41 | 65.71  ± 10.43 | < 0.001 |
| **Age at Study  End (y)** | 90.63  ± 7.78 | 85.92  ± 6.27 | < 0.001 | 92.02  ± 7.73 | 88.56  ± 6.62 | < 0.001 |
| **HBSIMD** | 2.58  ± 1.49 | 2.74  ± 1.51 | < 0.001 | 2.70  ± 1.52 | 2.88  ± 1.53 | < 0.001 |