**Table 1 Baseline characteristics of all patients presenting with OHCA admitted with AMI before and during the COVID19 pandemic in England**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Total admissions with AMI**  **N=29,635** | **Pre-COVID19 OHCA group N=731** | **COVID19 Period group**  **N= 524** | **P value\*** |
| Age, years mean (SD) | 68.2 (13.6) | 63.1 (12.2) | 67.1 (13.2) | <0.001 |
| Male (%) | 19295 (68.0%) | 581 (79.5%) | 373 (71.2%) | <0.001 |
| *Race (%)* |  |  |  | *0.008* |
| Whites | 20039 (86.7%) | 530 (89.4%) | 350 (83.7%) |  |
| Black | 368 (1.6%) | 7 (1.2%) | 5 (1.2%) |  |
| Asians | 1930 (8.3%) | 27 (4.6%) | 42 (10.0%) |  |
| Mixed | 787 (3.4%) | 29 (4.9%) | 21 (5.0%) |  |
| BMI mean (SD) | 28.2 (5.9) | 27.6 (4.9) | 28.1 (5.7) | 0.15 |
| **Presenting Characteristics** |  |  |  |  |
| Heart rate, bpm, mean (SD) | 78.8 (19.4) | 86.3 (24.2) | 84.6 (24.2) | 0.22 |
| Systolic blood pressure, mean (SD) | 140.2 (27.5) | 124.5 (30.4) | 125.7 (29.4) | 0.51 |
| Clinical syndrome |  |  |  | 0.62 |
| STEMI | 8867 (31.2%) | 538 (73.6%) | 379 (72.3%) |  |
| NSTEMI | 19513 (68.8%) | 193 (26.4%) | 145 (27.7%) |  |
| Creatinine, mean (SD) | 97.1 (64.9) | 102.5 (49.3) | 107.8 (69.9) | 0.13 |
| Peak Troponin levels, median (IQR) | 266 (43-1771) | 596 (40-4722) | 380 (23-4081) | <0.001 |
| *Kilip Class* |  |  |  | **0.17** |
| No heart failure | 21946 (84.6%) | 410 (65.8%) | 301 (66.2%) |  |
| Basal crepitation | 2599 (10.0%) | 70 (11.2%) | 44 (9.7%) |  |
| Pulmonary oedema | 1037 (4.0%) | 27 (4.3%) | 33 (7.3%) |  |
| Cardiogenic shock | 371 (1.4%) | 116 (18.6%) | 77 (16.9%) |  |
| LV systolic function |  |  |  | **0.007** |
| Good | 10499 (45.7%) | 182 (30.1%) | 121 (28.9%) |  |
| Moderate | 5785 (25.2%) | 233 (38.5%) | 141 (33.7%) |  |
| Poor | 1795 (7.8%) | 108 (17.9%) | 66 (15.8%) |  |
| Not assessed | 4894 (21.3%) | 82 (13.6%) | 91 (21.7%) |  |
| **Previous medical history** |  |  |  |  |
| Percutaneous coronary intervention | 4187 (16.8%) | 66 (10.6%) | 49 (11.4%) | 0.68 |
| Coronary artery bypass graft | 1740 (7.0%) | 28 (4.5%) | 29 (6.7%) | 0.12 |
| Heart failure | 1833 (7.3%) | 34 (5.5%) | 30 (7.0%) | 0.33 |
| Hypercholesterolemia | 8147 (32.6%) | 151 (24.6%) | 107 (24.9%) | 0.90 |
| Angina | 5193 (20.8%) | 53 (8.6%) | 55 (12.9%) | 0.02 |
| Cerebrovascular disease | 2042 (8.4%) | 86 (7.8%) | 25 (6.1%) | 0.14 |
| Myocardial infarction | 6015 (23.8%) | 94 (15.1%) | 83 (19.2%) | 0.07 |
| Peripheral vascular disease | 1100 (4.4%) | 16 (2.6%) | 14 (3.2%) | 0.54 |
| Chronic kidney disease | 3027 (11.9%) | 91 (14.4%) | 73 (16.4%) | 0.37 |
| Diabetes |  |  |  | <0.001 |
| Not diabetic | 20019 (72.6%) | 575 (85.3%) | 361 (76.6%) |  |
| Diet controlled | 1208 (4.4%) | 12 (1.8%) | 26 (5.5%) |  |
| Oral medications | 4112 (14.9%) | 67 (9.9%) | 54 (11.5%) |  |
| Insulin therapy | 2234 (8.1%) | 20 (3.0%) | 30 (6.4%) |  |
| Hypertension | 13850 (54.5%) | 254 (41.2%) | 209 (47.9%) | 0.02 |
| *Smoking status* |  |  |  | ***0.25*** |
| Never smoked | 8264 (35.6%) | 156 (31.1%) | 130 (36.4%) |  |
| Previous smoker | 8475 (36.5%) | 148 (29.5%) | 94 (26.3%) |  |
| Current smoker | 6503 (28.0%) | 198 (39.4%) | 133 (37.3%) |  |
| Asthma / COPD | 4444 (17.8%) | 88 (14.3%) | 71 (16.6%) | 0.31 |
| Family history of CHD | 6067 (28.5%) | 87 (16.6%) | 60 (17.0%) | 0.87 |
| **In-hospital Pharmacology** |  |  |  |  |
| Low molecular weight heparin | 9130 (42.4%) | 340 (60.7%) | 184 (50.8%) | 0.003 |
| Unfractionated heparin | 7001 (32.3%) | 286 (50.9%) | 153 (41.5%) | 0.005 |
| Warfarin | 718 (3.3%) | 20 (3.6%) | 11 (3.0%) | 0.63 |
| Loop Diuretic | 5054 (23.4%) | 162 (29.2%) | 118 (32.2%) | 0.35 |
| Glycoprotein IIbIIIa inhibitor use | 1435 (6.6%) | 93 (16.5%) | 69 (18.7%) | 0.38 |
| **Processes of care** |  |  |  |  |
| Seen by cardiologist | 27381 (97.7%) | 690 (96.8%) | 457 (91.0%) | <0.001 |
| Coronary angiography | 16918 (77.9%) | 305 (71.6%) | 177 (58.4%) | <0.001 |
| Percutaneous coronary intervention | 9635 (56.3%) | 176 (43.7%) | 102 (42.9%) | 0.84 |
| Time to reperfusion, hours mean (SD) | 3.0 (14.6) | 1.1 (1.4) | 2.1 (11.5) | 0.05 |
| P2Y12 use | 25629 (90.3%) | 553 (75.6%) | 378 (72.1%) | 0.16 |
| Dual antiplatelet therapy | 24936 (87.9%) | 525 (71.8%) | 364 (69.5%) | 0.37 |
| ACE inhibitors | 15702 (70.7%) | 338 (58.8%) | 197 (52.4%) | 0.26 |
| In-hospital mortality | 778 (2.8%) | 201 (27.8%) | 192 (37.7%) | <0.001 |

\*All statistical comparisons were made between pre-COVID19 and COVID19 period group only, SD= standard deviation, CHD= coronary heart disease, COPD= chronic obstructive pulmonary disease, LV= left ventricle, bpm= beats per minute, BMI= body mass index, OHCA= out of hospital cardiac arrest, UK lockdown= 22nd March 2020, COVID19 = Corona virus infection. Pre-COVID19 period= 1st February 2019 to 14th May 2019, COVID19 period= 1st February 2020 to 14th May 2020

**Table 2: Baseline characteristics of all patients presenting with OHCA undergoing PCI before and during the COVID19 pandemic in England**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Total AMI patients**  **N=22,026** | **Pre-COVID19 OHCA**  **N= 674** | **COVID 19 OHCA**  **N=270** | **P value\*** |
| Age, years, Mean (SD) | 65.3 (12.2) | 62.3 (12.2) | 63.0 (11.7) | 0.41 |
| Male | 16273 (73.9%) | 534 (79.2%) | 212 (78.5%) | 0.81 |
| *Ethnicity* |  |  |  | *0.49* |
| White | 14849 (83.9%) | 471 (89.0%) | 201 (91.0%) |  |
| Black | 235 (1.3%) | 5 (0.9%) | 0 (0.0%) |  |
| Asian | 1767 (10.0%) | 26 (4.9%) | 9 (4.1%) |  |
| Others | 854 (4.8%) | 27 (5.1%) | 11 (5.0%) |  |
| BMI | 28.4 (5.4) | 27.9 (4.9) | 27.7 (5.3) | 0.61 |
| Previous PCI | 5150 (23.7%) | 90 (13.7%) | 35 (13.5%) | 0.95 |
| Previous CABG | 1134 (5.2%) | 18 (2.7%) | 5 (1.9%) | 047 |
| Previous AMI | 5032 (23.1%) | 96 (15.1%) | 36 (14.0%) |  |
| CVA | 887 (4.2%) | 27 (4.5%) | 0 (0.0%) | <0.001 |
| Renal disease | 4711 (21.7%) | 163 (25.3%) | 114 (43.2%) | <0.001 |
| Hypercholesterolemia | 9403 (44.6%) | 207 (34.3%) | 48 (20.8%) | <0.001 |
| PVD | 754 (3.6%) | 23 (3.8%) | 9 (3.9%) | 0.96 |
| Smoking history |  |  |  | 0.19 |
| Never smoked | 8118 (40.4%) | 208 (40.5%) | 92 (47.9%) |  |
| Ex-smoker | 6823 (33.9%) | 135 (26.3%) | 42 (21.9%) |  |
| Current smoker | 5163 (25.7%) | 171 (33.3%) | 58 (30.2%) |  |
| Diabetes | 5292 (24.4%) | 91 (14.6%) | 29 (11.8%) | 0.28 |
| Hypertension | 11527 (54.7%) | 230 (38.1%) | 85 (36.8%) | 0.72 |
| LV systolic function |  |  |  | 0.12 |
| Good | 18188 (82.6%) | 452 (67.1%) | 195 (72.2%) |  |
| Moderate | 3073 (14.0%) | 145 (21.5%) | 42 (15.6%) |  |
| Severe | 746 (3.4%) | 77 (11.4%) | 33 (12.2%) |  |
| *Indication for intervention* |  |  |  | *0.63* |
| STEMI | 13257 (63.4%) | 122 (18.3%) | 52 (19.7%) |  |
| NSTEMI/ACS | 7647 (36.6%) | 543 (81.7%) | 212 (80.3%) |  |
| Arterial blood gas PH | 7.22 (0.16) | 7.19 (0.15) | 7.23 (0.13) | 0.07 |
| Base excess | -3.72 (7.8) | -3.74 (8.0) | -3.45 (8.3) | 0.72 |
| Cardiogenic Shock | 1475 (6.7%) | 233 (34.6%) | 89 (33.0%) | 0.64 |
| Glasgow come scale |  |  |  | 0.55 |
| GCS 15 | 1011 (95.1%) | 148 (36.7%) | 70 (39.3%) |  |
| GCS <8 | 52 (4.9%) | 255 (63.3%) | 108 (60.7%) |  |
| Mechanical ventilation | 26 (1.3%) | 338 (56.6%) | 132 (55.5%) | 0.76 |

\*All statistical comparisons were made between pre-COVID19 and COVID19 period group only, SD= standard deviation, CHD= coronary heart disease, COPD= chronic obstructive pulmonary disease, LV= left ventricle, bpm= beats per minute, BMI= body mass index, OHCA= out of hospital cardiac arrest, UK lockdown= 22nd March 2020, COVID19 = Corona virus infection. Pre-COVID19 period= 1st February 2019 to 14th May 2019, COVID19 period= 1st February 2020 to 14th May 2020

Figure 1: Temporal trends of monthly proportions of AMI patients presenting with OHCA before and during COVID19 pandemic in England

OHCA= out of hospital cardiac arrest, UK lockdown= 22nd March 2020, COVID19 = Corona virus infection. Pre-COVID19 period= 1st February 2019 to 14th May 2019, COVID19 period= 1st February 2020 to 14th May 2020

Figure 2: Monthly incidence of OHCA related hospitalizations during the COVID19 period compared to pre-COVID19 period in England



OHCA= out of hospital cardiac arrest, UK lockdown= 22nd March 2020, COVID19 = Corona virus infection. Pre-COVID19 period= 1st February 2019 to 14th May 2019, COVID19 period= 1st February 2020 to 14th May 2020

Figure 3: Temporal trends in rates of coronary angiography utilization in management of OHCA patients before and during COVID19 pandemic in England

OHCA= out of hospital cardiac arrest, UK lockdown= 22nd March 2020, COVID19 = Corona virus infection. Pre-COVID19 period= 1st February 2019 to 14th May 2019, COVID19 period= 1st February 2020 to 14th May 2020