Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

TCT CONNECT-215

Demographics and In-Hospital Outcomes of COVID-19 Patients Undergoing an Invasive Strategy for Acute Coronary Syndrome: The Global Multi-Centre Prospective COVID-ACS Registry

Thomas Kite,[1] Chris Gale,[2] Adriano Caixeta,[3] Parham Sadeghipour,[4] Manel Sabate,[5] Angel Iniesta,[6] Pilar Jimenez-Quevedo,[7] Luciano Candilio,[8] Stephen Hoole,[9] Nick Palmer,[10] Albert Ariza Solé,[11] Olga Bockeria,[12] Alim Namitokov,[13] Otilia Cristea,[14] Annika Eriksson,[15] Andrew Morrow,[16] Flavien Vincent,[17] Hector Hugo Escutia-Cuevas,[18] Charley Budgeon,[19] Gregg Stone,[20] Peter Ludman,[21] Nick Curzen,[22] Colin Berry,[23] Anthony Gershlick[24]

[1]University of Leicester, Leicester, United Kingdom; [2]Leeds University, Leeds, United Kingdom; [3]Hospital Israelita Albert Einstein, São Paulo, Brazil; [4]Rajaie Cardiovascular Medical and Research Center, Tehran, Iran; [5]Hospital Clinic Barcelona, Barcelona, Spain; [6]University Hospital La Paz, Madrid, Spain; [7]Hospital Universitario Clinico San Carlos, Madrid, Spain; [8]Royal Free London NHS Foundation Trust, London, United Kingdom; [9]Royal Papworth Hospital NHS Foundation Trust, Cambridge, United Kingdom; [10]The Liverpool Heart and Chest Hospital, Liverpool, United Kingdom; [11]Servicio de Cardiología, Hospital Universitario de Bellvitge, Barcelona, Spain; [12]Bakoulev Scientific Center for Cardiovascular Surgery, Moscow, Russian Federation; [13]Scientific Research Intitute - Ochapovsky Regional Clinical Hosp No 1, Krasnodar, Russian Federation; [14]Spitalul Clinic Jude ean de Urgenta Oradea, Oradea, Romania; [15]Örebro Univ Hospita, Örebro, Sweden; [16]West of Scotland Heart and Lung Centre, Golden Jubilee National Hospita, Glasgow, United Kingdom; [17]Lille University Hospital, Lille, France; [18]Regional Hospital ISSSTE Puebla, Puebla City, Puebla, Mexico; [19]The University of Western Australia, Perth, Western Australia, Australia; [20]Mount Sinai Heart Health System, New York, New York; [21]Queen Elizabeth Hosptial, Birmingham, United Kingdom; [22]University Hospital Southampton, Southampton, United Kingdom; [23]Golden Jubilee National Hospital, Glasgow, United Kingdom; [24]University Hospitals of Leicester, Leicester, United Kingdom

BACKGROUND The demographics, angiographic findings, and in-hospital outcomes of coronavirus disease-2019 (COVID-19) - positive patients undergoing an invasive strategy for suspected acute coronary syndromes (ACS) are not well defined. COVID-19-positive ACS patients may have different etiology and outcomes. Patient presentation times from small sample published data appear longer.

METHODS Anonymized data on 234 patients in 81 global centers are presented from this prospective registry for the period March 1, 2020, to May 31, 2020. As of submission date, a further 84 patients have been submitted. All were required to be COVID-19-positive (or have a high index of clinical suspicion, i.e., clinical status plus chest x ray/computed tomography scan findings) and to undergo coronary angiography for suspected ACS.

RESULTS Results are shown in Tables 1-3 and compared with National United Kingdom British Cardiovascular Intervention Society/Myocardial Ischaemia National Audit Project databases of non-COVID-19 ACS patients where available and appropriate. Major findings were: significantly higher proportion of COVID-19-positive patients had hypertension, hyperlipidemia, and renal dysfunction. In the ST-segment elevation myocardial infarction (STEMI) subgroup, symptom-to-door time was >double and door-to-balloon increased by median 20 minutes. Mortality was quadruple and in-patient stay double in this group. Similarly, mortality was significantly higher in non-STEMI COVID-19-positive cohort and in-patient stay also double. The high mortality may be due to the high incidence of cardiogenic shock (13.4% vs. 5%), with its 67% mortality.

Baseline Characteristic	COVID-ACS Total (n=234)	BCIS 2018-2019 Total (n=38669)	P Value
Median age – yr (IQR)	65 (IQR 56-75)	65 (IQR 56-74)	
Male sex – % (n)	72.9% (172/234)	73.5%	
Hypertension – % (n)	65.7% (151/230)	51.6%	**<0.001**
Hyperlipidaemia – % (n)	52.1% (114/219)	42.5%	**0.005**
Diabetes – % (n)	20.5% (48/234)	23.4%	0.304
Smoking status			
Current smoker – % (n)	30.4% (19/170)	28.0%	
Ex-smoker – % (n)	23.9% (64/170)	33.1%	
Non-smoker – % (n)	45.8% (87/170)	38.0%	
Heart failure – % (n)	9.0% (21/234)	Not collected	
Previous MI – % (n)	12.2% (28/230)	23.3%	**<0.001**
Chronic kidney disease – % (n)	12.2% (GFR<60) (28/230)	2.6% (Cr >200 or dialysis)	**<0.001**
Lung disease – % (n)	14.5% (33/227)	Not collected	
COVID-19 +ve/suspected –% (n)	76.5% (positive) (179/234)	Not collected	
	23.1% (suspected) (55/234)	Not collected	
Diagnosis			
STEMI % (n)	59.3% (105/177)	38.8% (MINAP)	
NSTEMI % (n)	40.7% (72/177)	61.3% (MINAP)	
Myocarditis % (n)	4.1% (9/220)	Not collected	
SCAD % (n)	2.3% (5/220)	Not collected	
Takutsubo % (n)	3.2% (7/220)	Not collected	
Unstable angina % (n)	2.7% (6/220)	Not collected	
Other % (n)	5.9% (13/220)	Not collected	
Unknown % (n)	1.4% (3/220)	Not collected	

STEMI			
FINAL DIAGNOSIS STEMI	**COVID-ACS Total (n=105)**	**BCIS 2018-2019 Total (n=22442)**	**P Value**
Symptom onset to admission – median (minutes) (IQR)	334 (164-1550)	135 (89-250)	
Door to balloon time – median (minutes) (IQR)	62.0 (30-255)	37.0 (16-94)	
Non-obstructive CAD – %(n)	2.0% (3/201)	Not collected	
Thrombotic occlusion – % (n)	46.4% (45/97)	Not collected	
Use of aspiration thrombectomy – n (%)	18.6% (18/97)	17.1%	0.710
Complete revascularisation –% (n)	52.6% (50/95)	Not collected	
Death – % (n)	23.1% (24/104)	5.7%	**<0.001**
Recurrent myocardial infarction – % (n)	3.9% (4/102)	Not collected	
Unplanned revascularisation – % (n)	Not collected	0.6%	
Stent thrombosis – % (n)	1.0% (1/104)	Not collected	
BARC 3-5 bleeding – % (n)	1.9% (2/103)	0.3% (36/13913)	
In-patient stay – median, (days)	6.4 (2.8-13.6)	3 (2-4)	

N-STEMI			
FINAL DIAGNOSIS N-STEMI	**COVID-ACS Total (n=72)**	**BCIS/MINAP 2018-2019 Total (n=33853)**	**P Value**
Symptom to admission - median (minutes) (IQR)	360 (156-2280)	180 (90-570)	
Admission to PCI time – median (days) (IQR)	2.1 (0.7-3.3)	2.7 (1.5-4.7)	
Non-obstructive CAD – % (n)	17.4% (12/69)	Not collected	
Thrombotic occlusion – % (n)	5.7% (5/54)	Not collected	
Use of aspiration thrombectomy (%)	0%	2.4%	
Complete revascularisation – % (n)	40.0% (20/50)	Not collected	
Death – % (n)	6.9% (5/72)	1.2%	**0.002**
Myocardial infarction – % (n)	8.7% (6/69)	Not collected	
Unplanned revascularisation – % (n)	Not collected	0.3%	
Stent thrombosis – % (n)	0%	Not collected	
Bleeding BARC 3-5 – % (n)	2.8% (2/71)	0.1% (28/22445)	
In-patient stay – median, (days)	6.7 (6.0-18.0)	2.7 (1.5-4.7)	

CONCLUSION These novel data indicate that COVID-19-positive ACS patients present later, have higher incidence of cardiogenic shock, and much higher mortality, which are likely to be inter-related. In-patient stay is prolonged compared to non-COVID-19 ACS.

CATEGORIES CORONARY: Acute Coronary Syndromes

TCT CONNECT-216

Effects of the COVID-19 Pandemic on a Population Older Than 75 Years With Previous Percutaneous Coronary Revascularization: Experience in Spain and Portugal

Jose De la Torre Hernandez,[1] Pilar Carrillo,[2] Jesus Jimenez-Mazuecos,[3] Alfonso Freites Esteves,[4] Juan Gabriel Cordoba Soriano,[5] Alejandro Gutierrez-Barrios,[6] German Calle Perez,[7] Belen Cid Alvarez,[8] Ramiro Trillo,[9] Tamara Garcia Camarero,[10] Armando Perez de Prado,[11] Juan Francisco Oteo Dominguez,[12] Georgina Fuertes Ferre,[13] Victor Alfonso Jimenez Diaz,[14] Iñigo Lozano,[15] Koldobika Garcia San Roman,[16] Raymundo Ocaranza-Sanchez,[17] Gines Martinez Caceres,[18] Juan Sanchis Fores,[19] Sílvio Leal,[20] Xavier Carrillo,[21] Alberto Rodrigues,[22] Mario Sadaba,[23] Imanol Otaegui,[24] Esther Lazaro Fernandez,[25] Jose Antonio Linares Vicente,[26] Francisco J. Morales,[27] Ricardo Santos,[28] Francisco Bosa Ojeda[29]

[1]Hospital Universitario Marques de Valdecilla, Santander, Spain; [2]H. Universitario San Juan, Alicante, Spain; [3]Complejo Hospitalario Universitario Albacete, Albacete, Spain; [4]Hospital San Juan, Alicante, Spain; [5]CHUAA, Albacete, Spain; [6]Hospital Puerta Del Mar, Cadiz, Spain; [7]Hospital Universitario Puerta Del Mar, Cadiz, Spain; [8]HCU Santiago de Compostela, Santiago de Compostela, Spain; [9]Hospital Clinico Universitario de Santiago, Santiago De Compostela, Spain; [10]H M de Valdecilla; [11]Hospital Universitario de Leon, Leon, Spain; [12]Hospital Universitario Puerta de Hierro, Madrid, Spain; [13]Hospital Miguel Servet, Zaragoza, Spain; [14]Hospital Alvaro Cunqueiro, University Hospital of Vigo, Vigo, Spain; [15]Hospital de Cabuenes, Gijon, Spain; [16]Hospital Universitario de Cruces, Baracaldo, Spain; [17]Lucus Augusti Universitary Hospital, Lugo, Spain; [18]Hospital U de Badajoz, Badajoz, Spain; [19]Hospital Clinico De Valencia, Valencia, Spain; [20]Hospital de Santa Cruz - CHLO, Lisboa, Portugal; [21]Hospital Germans Trias i Pujol; [22]Centro Hospitalar de Gaia, Gaia, Portugal; [23]Hospital de Galdakao, Galdakao, Spain; [24]Hospital Universitario Vall d'Hebron, Barcelona, Alabama, Spain; [25]Hospital Virgen de la Salud, Toledo, Spain; [26]Lozano Blesa Hospital, Zaragoza, Spain; [27]Puerto Real University Hospital, CADIZ, Spain; [28]Centro Hospitalar de Setubal, Setubal, Portugal; [29]Hospital Clinico de Tenerife, Santa Cruz de Tenerife, Spain

BACKGROUND In the COVID-19 pandemic, elderly people with cardiovascular risk factors and/or cardiovascular disease have been the most seriously affected. We sought to evaluate the impact of the pandemic, due to both the social confinement and the infection itself, in the population of patients older than 75 years of age with previous percutaneous coronary revascularization.

METHODS A subgroup of patients from the SIERRA 75 registry were included in the study. This is a prospective registry of patients older than 75 years undergoing percutaneous revascularization in 42 centers in Spain and Portugal. The follow-up of the patients has been updated, covering the entire period of outbreak and confinement (March 14 to May 10) through direct telephone contact to carry out a specific questionnaire for patients and their relatives. In addition, all electronic health records have been reviewed.

RESULTS A total of 709 patients have been included. Among those, 17 had died in the 12.5 ± 3.4 months follow-up prior to the start of the outbreak-confinement period. Therefore, 692 patients were followed during the study period: (mean age of 80.8 ± 4.2 years, 37% were women, 83% with hypertension, 44% with diabetes, 75% with previous STEMI/NSTEMI, 100% with previous PCI). During this period, 11 (1.6%) had confirmed COVID-19 (age 81.2 ± 5 years, 36% women). Eight were admitted to the hospital but none in the ICU. Among the 11 cases, 2 (18%) died, an 80-year-old man and a 76-year-old woman, both in the hospital. COVID-19 incidence was higher than in the global population in the region (1.6% vs. 0.4%; $p < 0.0001$). During this period of confinement, 91 patients (13%) presented cardiac symptoms (21 stable angina, 82 dyspnea and 6 syncope). Medical attention was demanded by 43 (6.2%), of whom 22 were admitted to the hospital. There were 4 (0.6%) cases with acute coronary syndrome and 4 (0.6%) underwent revascularization. Death was reported in 7 (1%) patients (2 due to COVID-19, 4 due to cardiovascular disease, and 1 due to multiple pathologies). The monthly mortality rate in this period was 2.6 times higher than in the previous months. Outpatient visits were canceled in 119 cases (17%) but 108 were contacted by phone.