

after a COVID-19 episode can be attributed to it. We hereby present a clinical case in which pheochromocytoma was masquerading as long COVID.

Design and method: Review of the patient's clinical record and the relevant literature.

Results: A previously healthy, non-smoker, 57-year-old woman was admitted in October 2020 with fever, dyspnea and asthenia. She was diagnosed with SARS-CoV-2 bilateral bronchopneumonia and required oxygen therapy but not assisted ventilation or intensive care. Three months after discharge the patient was asymptomatic but in the two following years she progressively developed symptoms of confusion, dizziness, inability to concentrate, gait instability, tachycardia, palpitations, anxiety and insomnia. The syndrome was labeled as post-COVID and in March 2022 began treatment with alprazolam and propranolol. Subsequently she complained of severe non-pulsatile holocranial headache accompanied by vertigo, nausea and skin pallor. In October 2022 she was admitted in Emergency Care with a BP reading of 226/118 mmHg, HR 132 bpm, ECG: sinus rhythm without repolarization anomalies. She was referred to our Outpatient Hypertension Clinic for workup of suspected secondary hypertension.

Physical exam: BMI 27.3 kg/m², BP 156/94 mmHg, FC 112 bpm, normal cardiopulmonary auscultation, no murmurs or oedema.

Lab: Plasma glucose, ionogram, lipid profile, blood count, free T4, TSH, aldosterone, renin, ARR, NT-pro-BNP: normal, metanephrines 876/1238 pg/mL, albuminuria 56 mg/g Cr.

Echocardiography: slight LVH (13 mm septum and posterior wall) with preserved function.

Abdominal CT: Left adrenal mass, 54 mm, hyperdense, heterogeneous.

MIBG scintigraphy: hyperintense left adrenal uptake without additional anomalies.

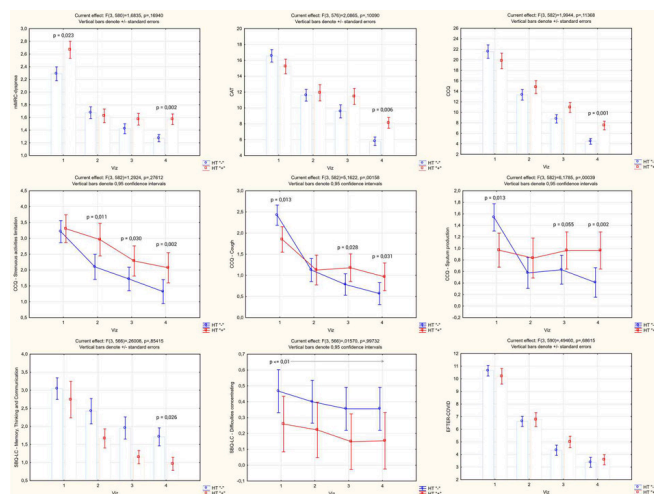
After standard presurgical conditioning the patient underwent laparoscopic adrenalectomy, uneventfully. Pheochromocytoma was pathologically confirmed, without suggestion of malignancy (Ki-67 <2%). Three months afterwards the patient is normotensive and asymptomatic without medication, with normal plasma metanephrines.

Conclusions: The clinical presentation of pheochromocytoma may be atypical and sometimes bizarre. Sustained hypertension may be absent, but the paradoxical hypertensive response to beta-adrenergic blockade is highly suggestive. Anyhow, a 'post-COVID syndrome' label may be masking unrelated and solvable serious diseases.

SYSTEMATIC LONG COVID SYMPTOMS ASSESSMENT IN HYPERTENSIVE AND NON-HYPERTENSIVE INDIVIDUALS DURING THE 12-MONTHS FOLLOW-UP AFTER HOSPITAL DISCHARGE

Oleksii Honchar, Kharkiv National Medical University, Kharkiv, UKRAINE

Objective: To study the impact of hypertension on the dynamics of physical, emotional and cognitive symptoms during the 12-months follow-up after hospitalization for COVID-19.



Design and method: 212 patients hospitalized for COVID-19 (50% hypertensive, 53% female, mean age 53,4±13,6 years) underwent comprehensive questionnaire survey evaluating physical (CAT, CCQ and mMRC dyspnea scales for respiratory and EFTER-COVID for other related symptoms), emotional (HADS) and cognitive well-being (Memory, Thinking and Communication subscale of SBQ-LC questionnaire, MTC-SBQ-LC) that was performed pre-discharge and repeated after 1, 3, and 12 months.

Results: Despite being older (57,8±11,8 vs 50,7±13,9, p<0,001) and having higher BMI (31,7±5,3 vs 27,4±4,4 kg/m², p<0,001), hypertensive participants had similar baseline summary scores of symptoms severity but slightly higher mMRC dyspnea score (2,7±1,1 vs 2,3±1,1, p = 0,023), and no significant difference in trends of summary scores have been detected by ANOVA (see graphic abstract). Non-hypertensive subjects had worse baseline limitation of everyday activity, cough and sputum production by respective CAT and CCQ sections that were characterized by better dynamics during follow-up. The residual level of respiratory-related symptoms at 12 months was higher in hypertensive cohort (CAT score 8,1±5,1 vs 5,8±5,0, p = 0,003, CCQ score 7,5±6,1 vs 4,5±5,1, p<0,001, mMRC dyspnea score 1,57±0,63 vs 1,27±0,54, p<0,001), most likely due to more frequent concomitant obesity and diastolic dysfunction.

The most striking data was obtained in the MTC-SBQ-LC: younger and healthier non-hypertensive participants displayed similar trends of most cognitive symptoms to the hypertensive cohort, but had persistently worse brain fog, difficulties in understanding others' speech, planning, concentrating, and word-finding, that resulted in significantly higher summary score at 12 months after discharge (1,71±2,36 vs 0,96±1,30, p = 0,010).

No differences were detected in anxiety and depression levels as assessed by HADS.

Conclusions: Hypertensive patients that had been hospitalized for COVID-19 displayed similar trends of resolving physical, emotional and cognitive symptoms throughout the 12-month follow-up but had higher levels of residual respiratory-related symptoms and dyspnoea compared to the non-hypertensive participants, whereas the latter were characterized by significantly higher level of cognitive dysfunction as assessed by the dedicated SBQ-LC subscale.

PRE-DISCHARGE SYSTOLIC BLOOD PRESSURE IN HOSPITALIZED COVID-19 PATIENTS IS AN INDEPENDENT PREDICTOR OF IMPROVEMENT IN 6-MINUTE WALK TEST DURING 1-MONTH FOLLOW-UP

Oleksii Honchar, Tetyana Ashcheulova, Kharkiv National Medical University, Kharkiv, UKRAINE

Objective: To study the relation of hypertensive status and systolic blood pressure (SBP) pre-discharge values to the dynamics of functional re-conditioning as assessed by 6-minute walk distance during the 1-month follow-up after hospitalization for COVID-19.

Design and method: 6-minute walk distance (6MWD) was assessed pre-discharge in 176 patients hospitalized for COVID-19 (40% hypertensive, 47% male, mean age 53,2 ± 13,5 years) using the 20 m walkway and an extended protocol that included monitoring of peripheral pulse and capillary blood oxygen saturation (SpO₂) every 30 seconds via bluetooth-connected pulse oximeter. The repeated evaluation was performed after 1 month of follow-up.

Results: Hypertensive participants were characterised by older age (57,8±11,8 vs 50,7±13,9, p < 0,001), higher weight and body mass index (31,7±5,3 vs 27,4±4,4 kg/m², p < 0,001). As a result, 6MWD in them was shorter (378±57 vs 418±75 m, p = 0,001) but no difference in reached percent of predicted distance (6MWD% was detected (63,0±8,5 vs 63,2±11,1, p = 0,939). The described relation persisted at 1 month, with no difference in absolute (72±43 vs 68±43 m, p = 0,324) and percentage gain of 6MWD (12,8±6,6 vs 11,2±7,5, p = 0,266) between groups.

Multiple regression analysis has allowed to build the model that accounted for 94% of variability in the 6MWD% gain between visits (85% for dedicated hypertensive cohort model). After adjustment for age, sex, height, weight, Remdesivir treatment, minimal SpO₂ levels during acute COVID-19, changes of SpO₂ and pulse rate throughout the 6MWT, SBP remained a potent independent predictor of 6MWD% gain, with 10 mmHg higher values at baseline evaluation being associated with 21,5% lesser 6MWD% gain in hypertensive subjects and 8,2% lesser – in normotensives.

Conclusions: Hypertensive status did not have an impact on 6MWD% in pre-discharge COVID-19 patients. Moderate-to-high quality multiple regression models have demonstrated an independent role of SBP, demographic and anthropometric data, changes of SpO₂ and pulse rate throughout the 6MWT in prediction of 6MWD% gain during 1 month after discharge, both in hypertensive and normotensive patients.

CARDIAC REMODELING IN HYPERTENSIVE PATIENTS WITH COVID-19: PRE-DISCHARGE ASSESSMENT AND A 1-MONTH FOLLOW-UP

Oleksii Honchar, Kharkiv National Medical University, Kharkiv, UKRAINE

Objective: To study the impact of hypertension on the formation of structural and functional cardiac changes during hospitalization for COVID-19 and the dynamics of detected changes in the early post-discharge period.

Downloaded from http://journals.lww.com/jhypertension by BhdMfscPpkav1zeoun1tQIN4e+kLlUEZgshH04XMI0 hQwCX1AWnYQp/llqHHD3d3D00DRj/TVSF14C3V/C1Y0abggQZxgG22MwZLeI= on 08/10/2023

Design and method: 212 hospitalized COVID-19 patients (mean age 53.4±13.6 years, 53% female) underwent comprehensive transthoracic echocardiographic examination and the 6-minute walk test at the baseline 1-2 days prior to discharge and after 31 days of follow-up, being compared to 88 matched controls.

Results: COVID-19 patients had increased absolute (10.1 ± 1.5 vs 9.1 ± 0.9 mm, $p < 0.001$) and relative LV walls thickness (0.45 ± 0.07 vs 0.39 ± 0.04 , $p < 0.001$), LV myocardial mass index (38.1 ± 8.9 vs 33.9 ± 5.8 g/m^{2.7}, $p < 0.001$) and left atrial volume index (28.6 ± 6.6 vs 25.1 ± 4.9 ml/m², $p < 0.001$), as well as decrease in LV global longitudinal strain (-17.5 ± 2.4 vs -18.6 ± 2 , 2%, $p < 0.001$) and diastolic filling parameters ($e' 9.2 \pm 2.2$ vs 11.3 ± 2.6 cm/s, $p < 0.001$; $E/e' 7.5 \pm 1.8$ vs 6.8 ± 1.7 , $p = 0.002$). The observed changes were more pronounced in the cohort of hypertensive participants, but also persisted among normotensive patients, resulting in a high prevalence of concentric LV geometry (78% and 43%, respectively, $p < 0.001$ between groups and vs control), predominantly grade I diastolic dysfunction (51% and 25%, $p < 0.001$ between groups and vs control), and abnormal values of global longitudinal strain (32% and 19%, $p = 0.027$ between groups, $p < 0.001$ vs control), all of which persisted throughout 1-month follow-up. The increase in the % of predicted 6-minute walk distance was 11.2 ± 7.5 in hypertensives vs 12.8 ± 7.6 in non-hypertensive participants, $p > 0.05$.

Conclusions: Hospitalised COVID-19 patients at the pre-discharge period were characterized by the high prevalence of LV concentric geometry and diastolic dysfunction, as well as the minor decrease of its longitudinal contractility, which were more pronounced in the presence of concomitant hypertension and did not improve during 1 month of follow-up.

THE IMPACT OF HYPERTENSION AND OTHER COMORBIDITIES ON THE SEVERITY AND OUTCOME OF COVID-19 INFECTION IN SUDANESE HOSPITALIZED PATIENTS AT JABRA ISOLATION CENTRE 2021

Hind Beheiry¹, Marwa Elhassan¹, Zakarya Almarrani¹, Shehab Hazaa², Gaafar Abdulsamad², Doaa Ahmed³, Mariam Moheieldin², Waleed Alhajj³, Osman Farhan², Mohammed Jaber⁴, Zein Ali², Hussam Elhadi⁵, Shima Daffalla⁶, Omar Abdelwahab⁵, Ibtisam Ali⁷, Mahasin Shaheen⁸. ¹International University of Africa, Khartoum, SUDAN, ²Ibrahim Malik Hospital, Khartoum, SUDAN, ³Institute of Endemic Diseases, Khartoum, SUDAN, ⁴Alzaiem Alazhari University, Khartoum, SUDAN, ⁵H care, Khartoum, SUDAN, ⁶University Hospital Waterford, Waterford, IRELAND, ⁷Zamzam University College, Khartoum, SUDAN, ⁸Al Qassimi Hospital, Sharjah, UNITED ARAB EMIRATES

Objective: Covid-19 has rapidly spread throughout the globe ever since it was declared as a pandemic in March 2020, it was associated with increased morbidity and mortality worldwide. In Sudan, (3rd January 2020 - 27th January 2023) there had been 63,736 confirmed cases of COVID-19 with 5,001 deaths, reported by WHO.

Objective: To measure the effects of Hypertension and other comorbidities on the severity and outcome of COVID 19 hospitalized patients at Jabra Isolation Centre.

Initial Admission Zone * OC_Discharge Crosstabulation

Count	Initial Admission Zone	OC_Discharge			Total
		Death	Discharge with residual complications	Full recovery (Home discharge)	
	Green	66	6	70	142
	Red	80	7	31	118
	Yellow	31	0	17	48
	Total	177	13	118	308

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.484 ^a	4	.002
Likelihood Ratio	19.678	4	.001
N of Valid Cases	308		

a. 2 cells (22.2%) have expected count less than 5. The minimum expected count is 2.03.

Design and method: A descriptive hospital-based study conducted in 2022 based on 2021 records at Jabra COVID-19 Isolation Centre/Sudan. The severity was assigned according to the hospital based categorized zones at Jabra Centre, and shown on admission sheets either to ICU red, HDU yellow, or floor green zones.

Results: 308 patients were enrolled, 197 (64%) were males; and 132 (42.9%) were hypertensive, 122 (39.6%) were diabetic, 25 (8.1%) had a cardiac disease, 23 (7.5%) had a kidney disease, 16 (5.2%) were asthmatic, 12 (3.9) had a thyroid disease, 11 (3.6%) had a cerebrovascular disease, and 7 (2.3%) had a history of a malignant disease. It was found that about 172 (55.8%) of the hospitalized patients were >60 years. All deaths were 177 (57.5%); of which 74 (41.8%) were hypertensive, 62 (35%) were diabetic, 17 (9.6%) of the death had cardiovascular disease, 16 (9%) had kidney disease, 9 asthmatic patients and 9 cerebrovascular disease patients died respectively. By age distribution, 105 (59.3%) of all deaths were >60 years; 80 (45.2%) of total deaths were ICU admitted patients. There was a significant association between the age and severity (P 0.017); and between the severity and the outcome (P 0.002).

Conclusions: The presence of Hypertension and other comorbidities led to increased adverse outcomes in the hospitalized Covid-19 patients. The deaths were (57.5%) of which the hypertensive was (41.8%) and the diabetic were 35%. There was significant association between the severity the disease and the outcome, and the age and the severity.

COMORBIDITIES AND MORTALITY IN PATIENTS WITH COVID-19 AMONG AGED 18 YEARS AND OLDER IN DILCHORA HOSPITAL-DIRE DAWA, EASTERN ETHIOPIA, 2022

Dagmawi Abebe Ayele, Hirbo Shore Roba. Haramaya University, Harar, ETHIOPIA

Objective: To describe the outcome and assess factors associated with mortality among hospitalized COVID-19 adult patients with chronic diseases in Dilchora hospital, Dire Dawa, Eastern Ethiopian, 2022

Design and method: A retrospective cohort study was used. Data was collected using a data extraction form by reviewing medical records of all hospitalized adult COVID-19 patients from May 3, 2021-January 26, 2022. The data extraction form consists of demographic and clinical information. Descriptive statistics were used to summarize data, mean, frequency, and percentages were used. Multivariate binary logistic regression was applied to assess the factors associated with mortality. Adjusted Odds ratio (AOR) with 95% CIs were used. Variables with a p-value of <0.05 were considered statistically significant.

Results: A total of 196 COVID-19 positive patients were included in the study. More than half, 107 (54.6%) were male. The mean age of the patients was 51 (SD = 17). 154 (78.6%) were urban residents. Of these, 46 (23.5%) patients died. Only 3 (1.5%) of them were fully vaccinated. Nearly half, 92 (47%) of patients had pre-existing comorbidity. The most common comorbidities were diabetes 26 (28.3%), hypertension 23 (25%), and congestive heart failure 18 (19.6%). 33 (71.7%) of dead patients had comorbidity. Factors that were associated with higher odds of mortality were advanced age ≥ 60 years (AOR 5.3, 95% CI 1.63-17.38), urban residence (AOR 5.2, 95% CI 1.21-22.43), presence of comorbidities (AOR 2.66, 95% CI 1.02-6.99), and severity (AOR 12.93, 95% CI 4.26-39.30).

Conclusions: COVID-19 patients with chronic non-communicable diseases faced a higher risk of in-hospital mortality. We recommend implementing aggressive preventive strategies including vaccination to combat COVID-19 targeting older adults, urban areas, and patients with chronic diseases comorbidity as a priority.