Methods: From 3/16/2020 to 5/19/2020, a follow-up was attempted for patients who were discharged alive from Henry Ford Hospital in Detroit and had recovered. Recovery was defined as being alive 30 days post symptom-onset. A telephone survey was conducted 30 days post-index admission and recorded in electronic medical records. Oxygen (O2) requirements, symptoms, readmissions and the need for antibiotics for secondary bacterial infections were evaluated.

Results: 585 patients met inclusion criteria and were contacted by phone; 303 answered their phone (Table 1), but only 266 (45%) completed a full telephone encounter and were included in the final analysis (Table 2). The majority were female (53%), black (80%), and discharged to home (84%). The clinical characteristics of those who completed the survey were as follows: 11% presented with O2 saturation < 90%, 16% had underlying lung pathology, and 57% had a BMI above 30. Patients' average age was 61 ± 14.3 years. At 30 days post-index admission, 49% were still symptomatic. Of the symptomatic patients, 86% had dyspnea on exertion and 15% required O2 supplementation. 18% of patients were readmitted within 30 days, and 9% developed a secondary infection prior to the phone encounter. No statistically significant differences in demographics or comorbidities were found between symptomatic and asymptomatic cohorts (Tables 1, 2).

Table 1. Results of Phone Encounters Performed on 303 Patients at 30 Days from Index Admission

	Number of Patients
Survival/answered phone call	303
Completed entire phone encounter	266
Disposition	
Unknown	10
Home	494
Subacute Rehab/Inpatient Rehab	35
Long Term Acute Care Hospital	9
Nursing Home	34
Other	3
Discharged on oxygen at 30 days	75
Requiring oxygen at 30 days	45
Symptoms at 30 days	
Fever	6
Fatigue	94
Dyspnea on exertion	18
Dyspnea at rest	113
Cough with purulence	60
Cough without purulence	129
Required readmission with 30 days	55
Required outpatient antibiotics for secondary infection	28

Table 2. Comparison of Symptomatic Versus Asymptomatic Patients at 30 Days from Index Admission

	All Patients (N = 266)	Asymptomatic (N = 135)	Symptomatic (N = 131)	P value
Demographics				
Age (Mean, SD[a]):	61, 14.3	59.8, 14.6	62.4, 13.9	0.141
Gender (N,%):				0.793
Females	124, 47%	64, 47%	60, 46%	
Males	142, 53%	71, 53%	71, 54%	
Race (N,%):				
White	15, 5.6%	8, 6%	7, 5%	0.642[b]
Black	214, 80%	108, 80%	106, 81%	
Other	16, 6%	10, 7%	6, 5%	
Declined	8, 3%	4, 3%	4, 3%	
Unknown	13, 5%	5, 4%	8, 6%	
Comorbidities[c] (N,%)				
HTN	208, 78%	104, 77%	104, 79%	0.642
DM	128, 48%	63, 47%	65, 50%	0.630
CKD	69, 26%	29, 21%	40, 31%	0.092
BMI>30	151, 57%	78, 58%	73, 56%	0.735
HIV	4, 1.5%	2, 1%	2, 1.5%	1.000
Autoimmune	0	0	0	
Transplant	12, 5%	7, 5%	5, 4%	0.591
Cancer	23, 9%	12, 9%	11, 8%	0.887
COPD/ILD	42, 16%	22, 16%	20, 15%	0.818
CAD	43, 16%	20, 15%	23, 18%	0.544
CHF	47, 18%	21, 16%	26, 20%	0.359
ESRD	23, 9%	12, 9%	11, 8%	0.887
Admission (N,%)				
O2 saturation at presentation:				0.122
≥95	155, 58%	75, 56%	80, 61%	
90-94	81, 30%	39, 29%	42, 32%	
86-89	17, 6%	11, 8%	6, 5%	
≤ 85	13, 5%	10, 7%	3, 2%	

[a] Standard deviation

[b] Patients who declined to specify their race or for whom the race was unknown were excluded from analysis of the association of race with symptom status

[c] HTN, hypertension; DM, Diabetes mellitus; CKD, Chronic kidney disease; BMI, Body mass index; HIV, Human immunodeficiency virus; COPD/ILD, Chronic obstructive pulmonary disease/interstitial lung disease; CAD, coronary artery disease; CHF, Congestive heart failure; ESRD, end stage renal disease

Conclusion: In our study, almost half of the discharged patients remained symptomatic after 30 days with a substantial proportion experiencing pulmonary symptoms. A better understanding of the long-term pulmonary sequelae following COVID-19 infection is needed to design interventions to reduce post-infectious morbidity.

Disclosures: **Indira Brar, MD**, **Gilead** (Speaker's Bureau)**janssen** (Speaker's Bureau)**ViiV** (Speaker's Bureau)

387. Markers for Mortality in COVID-19 Patients with Atrial Fibrillation or Flutter

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Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection can lead to many different cardiovascular complications, we were interested in studying prognostic markers in patients with atrial fibrillation/flutter (A. Fib/Flutter).

Methods: A retrospective cohort study of patients with confirmed COVID-19 and either with existing or new onset A. Fib/Flutter who were admitted to our hospital between March 15 and May 20, 2020. Demographic, outcome and laboratory data were extracted from the electronic medical record and compared between survivors and non-survivors. Univariate and multivariate logistic regression were employed to identify the prognostic markers associated with mortality in patients with A. Fib/Flutter

Results: The total number of confirmed COVID-19 patients during the study period was 350; 37 of them had existing or new onset A. Fib/Flutter. Twenty one (57%) expired, and 16 (43%) were discharged alive. The median age was 72 years old, ranged from 19 to 100 years old. Comorbidities were present in 33 (89%) patients, with hypertension (82%) being the most common, followed by diabetes (46%) and coronary artery disease (30%).

New onset of atrial fibrillation was identified in 23 patients (70%), of whom 13 (57%) expired; 29 patients (78%) presented with atrial fibrillation with rapid ventricular response, and 2 patients (5%) with atrial flutter. Mechanical ventilation was required for 8 patients, of whom 6 expired.

In univariate analysis, we found a significant difference in baseline ferritin (p=0.04), LDH (p=0.02), neutrophil-lymphocyte ratio (NLR) (p=0.05), neutrophil-monocyte ratio (NMR) (p=0.03) and platelet (p=0.015) between survivors and non-survivors. With multivariable logistic regression analysis, the only value that had an odds of survival was a low NLR (odds ratio 0.74; 95% confidence interval 0.53–0.93).

Conclusion: This retrospective cohort study of hospitalized patients with COVID-19 demonstrated an association of increase NLR as risk factors for death in COVID-19 patients with A. Fib/Flutter. A high NLR has been associated with increased incidence, severity and risk for stroke in atrial fibrillation patients but to our knowledge, we are first to demonstrate the utilization in mortality predictions in COVID-19 patients with A. Fib/Flutter.

Disclosures: **Jihad Slim, MD**, **Abbvie** (Speaker's Bureau)**Gilead** (Speaker's Bureau)**Jansen** (Speaker's Bureau)**Merck** (Speaker's Bureau)**ViiV** (Speaker's Bureau)

388. Multidrug Resistant Gram Negative Organisms Prevalence in Hospitalized Patients in an Italian Tertiary Level Hospital During COVID-19 Pandemia: First Detection is More Frequent in Clinical Samples than in Surveillance Rectal Swabs with Respect to the Previous 14-Month Period

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Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background: In Italy the pandemic of COVID-19 infection has placed an enormous burden on health authorities: contact precautions are required to avoid viral transmission and people should be subjected to standard infection control procedures. This is crucial in a country experiencing a high number of confirmed cases of COVID-19 infection in Europe and where multidrug-resistant Gram-negative bacteria (MDR-GN) are endemic.The aim of this study was to compare the prevalence of MDR-GN in surveillance rectal swabs (SRS) and in clinical samples (CS) in the period March 1,2020-April, 24 2020 with respect to the previous 2-month period and to the previous year.

Methods: The first SRS and the first CS with a MDR-GN isolate detected from 01/01/2019 to 24/04/2020 were included. Analysis was made by comparing three different study periods in 2019 and 2020 (Jan-Dec 2019, Jan-Feb 2020, and Mar-Apr 2020), for medical department, surgical department and intensive care department.

Results: Overall, 612 MDR-GN organisms were identified (399 SRS and 213 CS): carbapenemase-producing *Klebsiella pneumoniae* and *Acinetobacter baumanii* (CPAB) were the most frequently detected (Figure 1). We observed an increased relative frequency of patients with MDR-GN detected in CS respect to those found in SRS (32.7% vs 44.5% vs 70.6%, p=0.0005): 5/12 CS detected in the last period were isolated from the respiratory tract (Figure 2). Nine patients with COVID-19 pneumonia had MDR-GN. All but two patients had a previous negative SRS performed 4 days before (median value) and the median interval between COVID-19 positivity and MDR-GN

positivity was 7 days.The six patients with CPAB isolation were all hospitalized in the same ward, with partially overlapping hospital stays during the study period. In 5 of them, CPAB was detected in the respiratory tract (Figure 3).

Figure 1. Description of carbapenemase producing *Klebsiella pneumoniae*, carbapenemase producing *Acinetobacter baumannii* and of other multidrug resistant gram negative strains isolated in surveillance rectal swab (SRS) (a) and in clinical samples (CS) (b) from January 1, 2019 to December 31 (period A) form January 1, 2020 to February 29,2020 (period B) and from March 1, 2020 to April 24, 2020 (period C). Data are reported by absolute numbers and percentage respect to the total number of isolates detected in SRS or in CS in the specific department.

(a) surveillance rectal swabs

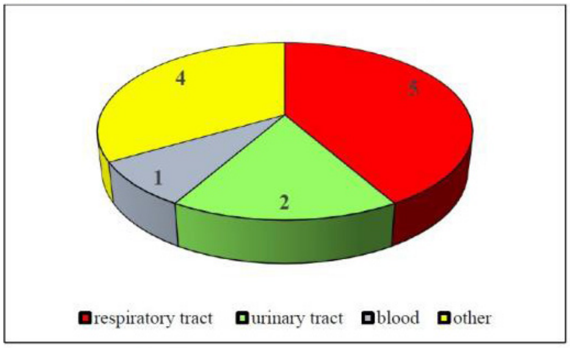
	Medical Department			Surgery Department			Intensive Care Department			Total		
	Period A	Period B	Period C[a]	Period A	Period B	Period C[a]	Period A	Period B	Period C[a]	Period A	Period B	Period C[a]
All patients, n	108	11	1	161	10	0	95	9	4	364 (60/bimester ,mean)	30	5
Acinetobacter baumannii	36 (33.3)	0	0	30 (18.6)	1 (10)	0	36 (37.9)	8 (88.9)	1 (25)	102 (28)	9 (30)	1 (20)
Klebsiella pneumonie	51 (47.2)	10 (90.9)	1 (100)	106 (65.8)	7 (70)	0	44 (46.3)	1 (11.1)	3 (75)	201 (55.2)	18 (60)	4 (80)
Pseudomonas aeruginosa	11 (10.2)	1 (9.1)	0	14 (8.7)	1 (10)	0	7 (7.4)	0	0	32 (8.8)	2 (6.7)	0
Others	10[b] (9.3)	0	0	11[c] (6.8)	1[d] (10)	0	8[e] (8.4)	0	0	29 (8)	1 (3.3)	0

(b) clinical samples

	Medical Department			Surgery Department			Intensive Care Department			Total		
	Period A	Period B	Period C	Period A	Period B	Period C	Period A	Period B	Period C	Period A	Period B	Period C
All patients, n	70	10	3	33	7	2	74	7	7	177 (29/bimester ,mean)	24	12
Acinetobacter baumannii	32 (45.7)	6 (60)	0	4 (12.1)	2 (28.6)	0	27 (36.5)	4 (57.1)	7 (100)	63 (35.6)	12 (50)	7 (58.3)
Klebsiella pneumonie	14 (20)	2 (20)	2 (66.7)	11 (33.3)	3 (42.9)	1 (50)	33 (44.6)	1 (14.3)	0	58 (32.8)	6 (25)	3 (25)
Pseudomonas aeruginosa	15 (21.4)	1 (10)	1 (33.3)	17 (51.5)	2 (28.6)	1 (50)	11 (14.9)	2 (28.6)	0	43 (24.3)	5 (20.8)	2 (16.7)
Others	9[f] (12.9)	1[g] (10)	0	1[h] (3)	0	0	3[i] (4.1)	0	0	13 (7.3)	1 (4.2)	0

[a] March 1, 2020: wide diffusion in the tertiary hospital
[b]: 5 strains of *Enterobacter cloacae*; 4 strains of *Escherichia coli*; 1 strain of *Enterobacter aerogenes*
[c]: 5 strains of *Escherichia coli*; 4 strains of *Enterobacter aerogenes*; 2 strains of *Enterobacter cloacae*
[d]: 1 strain of *Escherichia coli*
[e]: 5 strains of *Escherichia coli*; 2 strains of *Enterobacter cloacae*; 1 strain of *Enterobacter aerogenes*
[f]: 3 strains of *Proteus mirabilis*; 2 strains of *Escherichia coli*; 2 strains of *Stenotrophomonas maltophila*; 1 strain of *Enterobacter cloacae*; 1 strain of *Campylobacter jejuni*
[g]: 1 strain of *Burkholderia cepacia*
[h]: 1 strain of *Burkholderia cepacia*
[i]: 2 strains of *Burkholderia cepacia*; 1 strain of *Stenotrophomonas maltophila*

Figure 2. Description of clinical samples detected during COVID-19 pandemia.



other: skin (2), urethra (1), purulent material (1)

Figure 3. Description of the characteristics of carbapenemase producing *Klebsiella pneumoniae* (CPKP), carbapenemase producing *Acinetobacter baumannii* (CPAB) and of other multidrug resistant gram negative strains detection in patients with COVID-19 pneumonia.

Patient	*Isolates*	*Dept*	*Site of the first MDR-GN detection*	*Interval between COVID-19 detection and MDR-GN isolation*	*Interval between previous negative SRS and first MDR-GN detection*	*Interval between previous negative CS and first MDR-GN detection in the same site*	*Other positive sites of MDR-GN*
Pt 1 (M, 62 y)	CPAB (OXA-23)	ICD	SRS + Upper respiratory tract	9 days	7 days	7 days	Lower respiratory tract + blood
Pt 2 (M, 54 y)	CPKP (OXA-23)	ICD	SRS	4 days	Not tested	Not applicable	Upper and lower respiratory tract + Urinary tract
Pt 3 (M, 62 y)	CPAB (OXA 23)	ICD	SRS + Upper and lower respiratory tract	7 days	4 days	4 days	-
Pt 4 (M, 78 y)	CPKP (KPC)	ICD	SRS	2 days	Not tested	Not applicable	-
Pt 5 (M, 76 y)	CPAB (OXA23)	ICD	SRS + Lower respiratory tract	13 days	4 days	4 days	Blood
Pt 6 (M, 69 y)	CPAB (OXA 23)	ICD	Urethral swab	25 days	2 days	Not tested	SRS + Blood
Pt 7 (F, 60 y)	CPAB (OXA 23)	ICD	Lower respiratory tract	4 days	5 days	4 days	SRS + Blood
Pt 8 (M, 71 y)	CPAB (OXA 23)	ICD	SRS + Lower respiratory tract	31 days	12 days	8 days	Urethral swab
Pt 9 (M, 82 y)	PSAE	MD	Skin	6 days	1 day	Not tested	-

MDR-GN: multidrug resistant gram negative
SRS: surveillance rectal swab
ICD: intensive care department
MD: medical department

Conclusion: The first detection of MDR-GN in CS and the nosocomial MDR-GN acquisition despite cohorting due to COVID-19 infection underline the need to re-inforce infection control measures in a high prevalence country during COVID-19 pandemia. A correct antimicrobial policy urged because, according to published data, most patients with COVID-19 infection received antimicrobial therapy: furthermore MDR-GN infection could play a role in the negative outcome of these patients.

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389. Neutrophil-lymphocyte index, platelet-lymphocyte index and systemic inflammation-immunity index in patients with Covid-19 pneumonia in Veracruz, Mexico

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Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background: Different indices have been devised that attempt to correlate the severity of the symptoms and predict mortality mainly in septic states and inflammation, with important results that validate their usefulness. In the present pandemic, to date, no indices have been used in severe cases of Covid- 19 that can predict the outcome.

Result of the measurement of demographic and clinical variables

Result of the measurement of demographic and clinical variables.

Variable	Results* n = 100
Demographic variables	
Age, years	49.4 (19.3)
Gender; n (%)	
Women	54 (54)
mens	46 (46)
Laboratory variables	
Leukocytes, cel / mm3	10,103.0 (4,289.0)
Neutrophils, cel / mm3	8,509.3 (4,216.0)
Lymphocytes, cel / mm3	1112.7 (585.4)
Platelets, cel / mm3	258,548.0 (127,947.2)
Hematological severity indices	
Neutrophil / lymphocyte ratio	10.7 (10.9)
Platelet / lymphocyte index	290.1 (229.2)
Immune index-systemic inflammation, x 109	2.6 (3.4)
Type of COVID-19 pneumonia, n (%)	
Mild pneumonia	54 (54)
Severe pneumonia	46 (46)
Hospital outcome, n (%)	
Improvement	75 (75)
Death	25 (25)

* Results expressed in means with standard deviation (± SD), except when otherwise indicated

Comparative analysis of the variables studied stratified by hospital outcome

Comparative analysis of the variables studied stratified by hospital outcome

Variable*	Improvement	Death	p
Demographic variables			
Age, years	45.9 (18,6)	60.0 (17.5)	0.001§
Gender, n (%)			
Women	45 (60.0)	9 (36.0)	0.063£
mens	30 (40.0)	16 (64.0)	0.063£
Laboratory variables			
Leukocytes, cel / mm3	9,594.1 (3,190.4)	11,629.6 (6,423.6)	0.139§
Neutrophils, cel / mm3	7,856.8 (3,093.6)	10,466.8 (6,204.1)	0.053§
Lymphocytes, cel / mm3	1,274.0 (544.5)	628.8 (419.3)	0.001§
Platelets, cel / mm3	275,450.6 (113,072.5)	207,840.0 (156,637.7)	0.021§
Hematological severity indices			
Neutrophil / lymphocyte ratio	7.5 (4.9)	20.4 (16.9)	0.001§
Platelet / lymphocyte index	247.7 (127.4)	417.1 (379.7)	0.038§
Immune index-systemic inflammation, x109	1.9 (1.2)	4.8 (6.1)	0.030§
Type of COVID-19 pneumonia, n (%)			
Mild pneumonia	54 (72.0)	0 (0.0)	0.001£
Severe pneumonia	21 (28.0)	25 (100.0)	0.001£

* Results expressed in means with standard deviation (± SD), except when otherwise indicated.
§T of Student; £ Chi Square with Fisher's exact test

Methods: It includes a cohort of patients with pneumonia confirmed by Sars Cov 2 PCR-RT, treated at the Veracruz Norte branch of the Instituto Mexicano del Seguro Social from April to May 2020, analyzing the neutrophil-lymphocyte, platelet-lymphocyte and immunity-systemic inflammation indices.