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# FACTORS AFFECTING INTENSIVE CARE AND MORTALITY IN SARS-CoV 2019 HOSPITAL PATIENTS

Clinical Research

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## ABSTRACT

**Backround:** Information on prognosis and treatment in COVID-19 is limited and variable. We wanted to report the demographic, clinical, laboratory, radiological data and treatment and follow-up results of our patients diagnosed with COVID-19 in the study and to determine the factors affecting prognosis and mortality. **Materials-methods:** The study included 1161 inpatients with PCR positive and/or radiologically diagnosed COVID-19 pneumonia. Of these, 151 patients were taken to the intensive care unit and 37 patients were intubated. The data obtained through the system were evaluated retrospectively and observationally. **Results:** The mean age of 1161 inpatients was 54.5 years and 616 (53.1%) were male. 104 (8.9%) of 1161 inpatients died. 151 (13%) were taken to the intensive care unit. Of these, 37 (24.5%) were intubated. The analysis revealed age($p<0.001$), gender($p<0.001$), presence of comorbid disease ($p<0.001$), cough($p<0.001$), shortness of breath ($p<0.001$), fatigue and malaise symptoms ($p<0.001$) and in the laboratory and significant correlation was found with some laboratory parameters and some treatment options ($p<0.001$).When the living and deceased patients were compared; age ($p<0.001$), gender($p=0.001$), presence of additional disease ($p<0.001$), cough($p<0.001$), shortness of breath ($p<0.001$), malaise and fatigue symptoms ($p<0.001$), in the laboratory; significant correlation was found with some laboratory parameters and some treatment options ($p<0.001$).**Conclusion:** We believe that these data obtained in our study will be important in predicting prognosis and mortality and in effective patient management. We wanted to emphasize that hydroxychloroquine, favipravir, methylprednisolone and enoxoparin are effective in reducing mortality in the treatment.

## KEYWORDS

COVID-19, prognosis, mortality, treatment, intensive care, inflammation, co-morbidities.

## INTRODUCTION

Clinical course varies in COVID-19. While it is mostly spent outstanding with asymptomatic or mild symptoms, some patients experience hospitalization and death with severe symptoms in the intensive care unit. [1,2,3] Mortality in critical patients has been reported to be 26-62% in studies reported from China and Italy and 23-50% in studies reported from Seattle and New York. [4,5,6] In another article from America, mortality was reported as 18.7% .[8] Information on factors affecting clinical course is limited. Various risk factors were emphasized in the studies. The age of the patient, smoking status, symptom, presence of comorbid disease were reported as risk factors.[9,10] We aimed to be effective in the follow- up and management of people diagnosed with COVID-19 by determining the factors effective in mortality and admission to the intensive care unit in our study.

### Material-method

The study included 1695 patients admitted to University of Health Science, Sultangazi Haseki Training and Research Hospital between March 13 and May 7, 2020 and diagnosed with COVID-19. 534 patients were followed up at home to apply isolation conditions. Patients with PCR positive and/or radiologically COVID-19 compliant findings; patients over 50 years of age and /or with comorbidities; patients whose COVID-19 compliant symptoms worsened; patients with pneumonia/severe pneumonia were hospitalized and treated[11] were evaluated. Demographic information, symptoms, PCR and laboratory examinations, comorbidities, treatment and clinical follow-up results of all hospitalized patients were collected from the system.

From the Ethics Committee of University of Health Science, Sultangazi Haseki Training and Research Hospital Ethics committee approval dated September 2020 and numbered 2020/187 was obtained. Informed consent was submitted by all subjects when they were enrolled.

SPSS 15.0 for Windows program was used for statistical analysis. Descriptive statistics were given as number and percentage for categorical variables, mean ± SD and median for numerical variables. The ratios in the groups were compared with the Chi-Square Test. Independent group comparisons of numerical variables were performed with Mann- Whitney U Test since the normal distribution condition was not met. The determining factors were examined by Logistic Regression Analysis. Statistical alpha significance level was accepted as $p<O.O5$.

## RESULTS

The mean age of 1161 inpatients was 54.5 years and 616 (53.1%) were male. The mean length of hospital stay was 8.7 days. The most common comorbidities were hypertension, the most common symptoms were cough and shortness of breath. Of the 1161 inpatients, 1040 (89.5%) were discharged, 3 (0.25%) left the hospital unannounced, 9 (0.77%) were referred to another institution, and 4 (0.34%) were still in bed at the time of notice. 104 (8.9%) of them died. 151 (13%) were taken to the intensive care unit. Of these patients, 37 (24.5%) were intubated. In patients who are taken into intensive care; the length of stay in the intensive care unit was 12.4 days. The mean age of the patients was 63 years and 104 (68.9%) were male. Age and length of hospital stay were significantly higher in patients admitted to intensive care unit and admission to intensive care unit was higher in male gender ($p<0.001$). (Table 1).

There was no difference between patients admitted to intensive care unit and patients not admitted to intensive care unit in terms of smoking *($p>O.O5$)*. When evaluated in terms of symptoms, there was a significant difference in terms of cough, shortness of breath, fatigue and malaise *($p<O.OOl, p<O.OOl, p<O.OOl$)*. There was a significant difference in the presence of additional disease ($p<O.OOl$). Hypertension, heart disease, kidney disease, chronic obstructive pulmonary disease, neurological disease and cancer were significantly different between those who were taken to intensive care unit and those who were not taken($p=O.O2O, p<O.OOl, p=O.OOl, p=O.OO4, p=O.O25, p<O.Ol6,$ respectively). There was no significant difference in t- CT findings ($p=O.l75$). Outpatient

laboratory evaluations of patients hospitalized in the intensive care unit revealed statistically significantly higher levels of glucose(*p<O.OOl*), creatinine (*p<O.OOl*), AST(*p<O.OOl*), LDH(*p<O.OOl),* creatinine kinase(*p=O.Ol8*), troponin*(p<O.OOl*), ferritin(*p=O.Ol5*), CRP(*p<O.OOl)* procalcitonin(*p<O.OOl*), APTT(*p=O.O22*), fibrinogen(*p=O.Oll*), leukocyte (*p=O.OO3)* and neutrophil (*p<O.OOl*) compared to those not taken to intensive care unit; EGFR(*p<O.OOl*), albumin(*p<O.OOl*), PT(*p<O.OOl*), platelet*(p<O.OOl)*, min lymphocyte(*p<O.OOl*), lymphocyte*(p<O.OOl*) and minimum eosinophil mean(*p=O.O38)* were statistically significantly lower. When the treatment was examined, the use of hydroxychloroquine, azithromycin lopinavir + ritonavir, favipravir and enoxaparin was significantly higher in patients who were not taken to intensive care unit (*p<O.OOl, p=O.O23, p<O.OOl, p<O.OOl, p<O.OOl,* respectively) and methylprednisolone use was significantly higher in patients taken to intensive care unit (*p<O.OOl).* (Tables 2, 3, 4).

104 of the patients died. The length of hospital stay of the deceased was 3.57 days and was significantly lower than the living patients (*p<O.OOl).* The mean age was 64.8 years, 71 were male. Age and number of male gender were significantly higher than living patients. The mean length of hospital stay was 11.7 days. The mortality rate was significantly higher in patients admitted to intensive care unit and intubated unit (*p<O.OOl, p<O.OOl*). There was no significant difference between patients living in terms of t-CT findings and smoking (*p=O.O68, p=O.O56*). The presence of additional disease was significantly higher in deceased patients (p<0.001). Of these, hypertension, diabetes, heart disease, kidney disease, chronic obstructive pulmonary disease, neurological disease and cancer were the most common ones (*p=O.OO9, p=O.O25 p<O.OOl, p<O.OOl, p<O.OOl, p=O.O49, p=O.OO9,* respectively). Cough, shortness of breath, fatigue and malaise were significantly common symptoms in patients who died (*p<O.OOl, p<O.OOl, p<O.OOl,* respectively). In laboratory examinations; while blood sugar, creatinine, AST, LDH, creatinine kinase, troponin, CRP, procalcitonin, APTT, neutrophil levels were significantly higher in deceased patients (*p=O.OO9, p<O.OOl p<O.OOl p=O.O25, p<O.OOl, p<O.OOl, p=O.Ol7, p=O.OO5 p<O.OOl*, respectively), GFR, albumin, platelet, minimum lymphocyte, lymphocyte percentage and minimum eosinophil were significantly lower (*p<O.OOl p<O.OOl p<O.OOl, p<O.OOl,* respectively). The mortality rate was significantly lower in patients receiving hydroxychloroquine, ritonavir/lopinavir, favipravir, methylprednisolone, enoxaparin (*p<O.OOl p<O.OOl p <O.OOl p<O.OOl*, respectively) (Table 5).

According to logistic regression analysis; age, comorbidity, fatigue and malaise, hydroxychloroquine, methylprednisolone favipiravir use, LDH found to be associated with going to intensive care.(p=0.041, p=0.007, p=0.007, p=0.013, p=0.000, p=0.045, p=0.010, respectively) (Table 6). And age, comorbidity, methylprednisolone favipiravir use, platelet account, LDH found to be associated with mortality(p=0.001, p=0.003, p=0.000, p=0.045, p=0.016, p=0.000, respectively) (Table 7).

## DISCUSSION

SARS-CoV-2 infection is a rapidly spreading disease worldwide and there is still no specific treatment or vaccine available. For this reason, early detection of risky individuals and timely intervention will reduce mortality. Most studies indicating the demographic, clinical and laboratory characteristics of COVID-19, risk factors and follow-up results of patients have been reported from China.[12, 13, 14 15, 16] Many articles have been written about risk factors, but there are fewer studies reporting data in severe patients and patients in intensive care. In a meta- analysis, the prevalence of intensive care visits was found to be 33%, 32% in the Chaolin et al study and 46% in the Rong et al study. [9,17, 18] In our study, the rate of intensive care was found to be 13%.

Age is indicated as an important risk factor in studies.[13, 19, 20] Mortality rates have been reported to increase gradually after 70 years of age while there is no mortality in children under 9 years of age.[13, 20] In the Chaolin et al study, the mean age was 49, mortality was 15%, the mean age was 59, mortality was 61%, the mean age was 70.7 and mortality was 46.6% in the Rong et al study, the mean age was 69, mortality was 15.4% in the Anish et al study, and the mean age was 72 and mortality was 20.4% in the Ji Yeon Lee et al study.[2, 3, 9, 18, 21] In our study, the mean age of our patients was 54.5 and the mortality rate was 8.95%. The mean age was significantly higher in those who were taken to the intensive care unit and those who died.

Female gender has been reported to be less susceptible to the virus and X chromosome and sex hormones have a protective effect[22]. Studies have reported that male gender is associated with risk factor and mortality for severe disease.[2,8,9,20,21] In the study of Chaolin et al., half of the 41 patients evaluated and 85% of the patients who were taken to the intensive care unit were reported to be male.[9] The majority of the patients evaluated in Xiabo, Rong Anish Agarwal et al studies were male (67%, 78%, 67.5%, 75% respectively).[2, 8, 18, 21] In our study, 616 (53.1%) of our patients were male. Among our patients who went to intensive care and died, the number of male patients was significantly higher, but did not emerge as an independent risk factor in logistic regression analysis.

The presence of comorbidities in COVID-19 was found to be associated with intensive care visits and mortality.[2, 9, 20, 22] Cardiovascular disease, diabetes, chronic lung disease, hypertension and cancer are particularly emphasized.[13, 20, 22] In our study, we found that 331 (28.8%) of 1161 patients who were hospitalized had at least one comorbidity, the most common being hypertension. In addition, there was a relationship between hypertension, heart disease, kidney disease, chronic obstructive pulmonary disease, neurological disease and cancer and mortality and intensive care. Findings were consistent with the literature.

Symptoms can be very varied in COVID-19. Although respiratory symptoms are common, symptoms such as nausea, vomiting, abdominal pain, diarrhea, headache, taste disturbances can also be seen.[2, 9, 15, 20] Du et al. reported that the most common symptoms were fever and cough, while fatigue complaints were higher in patients admitted to intensive care unit[15]. In another study by Rong-Hui Du, the most common symptoms were reported as fever, cough and shortness of breath, and it was not found to be associated with intensive care.[18] In the study of Chaolin et al., fever, cough, muscle pain and fatigue were frequently reported and no correlation was found between symptoms and intensive care admission and mortality.[9] In the study of Agarwal et al., fever, dry cough and shortness of breath were the most common reports.[8] In the study by Peng Peng et al., fever, cough and fatigue were reported as common symptoms but were not found to be associated with poor clinical outcome. [20] In our study, the most common symptoms were cough, shortness of breath, fatigue, malaise, and it was also found to be associated with intensive care unit admission and mortality.

Increased leukocyte count, decreased lymphocyte and platelet count, increased CRP, procalcitonin, LDH, AST, LOWER, CK, and creatinine were found to be associated with severe disease and intensive care.[9, 22, 23] Changzi Zhou et al. found that leukocyte and platelet count, CRP, AST, albumin and fibrinogen values were associated with the severity of the disease in 123 healthy young patients without additional disease. Among these, the association of lymphopenia with prognosis was emphasized .[24] In the study of Zhou F et al., a relationship was found between D-dimer level and poor prognosis.[12] In our study, there was a correlation between mortality and intensive care in glucose, creatinine, EGFR, AST, LDH, creatinine kinase, troponin, albumin, CRP, procalcitonin, fibrinogen, leukocyte, platelet, neutrophil and lymphocyte levels.

Unfortunately, there is no specific treatment for COVID-19 yet. The effects of the drugs used on prognosis or mortality are not sufficiently known. Among these drugs, chloroquine analogues are known to be used in antimalarial and herbal immune diseases.[25] It has been shown to inhibit the acidification of endosomes and exhibit an in vitro non-specific antiviral effect (HIV, dengue, hepatitis C, chikungunya, influenza, Ebola, SARS and MERS viruses and recently against COVID-19). Molina et al. reported that despite the reported antiviral activity of hydroxychloroquine, they found no evidence of a strong antiviral activity or clinical benefit of the combination of hydroxychloroquine and azithromycin for the treatment of COVID-19 in hospitalized patients.[26] Alexandre et al. 504 reported that among patients hospitalized with mild to moderate Covid-19, the use of hydroxychloroquine alone or with azithromycin was not superior to standard care in improving the clinical condition in 15 days .[27] Wei Tang et al. found that adding hydroxychloroquine to the treatment in mild to moderate COVID-19 did not have an additional benefit in eliminating viruses, but increased side effects as the dose increased.[28] Jun Chen et al. reported that there was no difference in virus clearance in COVID- 19 patients given and not given hydroxychloroquine.[29] Gautret et al. found that the use of hydroxychloroquine and

azithromycin together was significantly related to the decrease in viral load in COVID-19cases.[30] In our study, we found that the use of hydroxychloroquine affects both intensive care and mortality, although the use of azithromycin affects intensive care, it is not effective on mortality.

Lopinavir/ritonavir used in treatment is an HIV protease inhibitor. Data on its antiviral activity against SARS CoV 1 are limited. Lim J et al. reported no significant effect in a case from South Korea.[31] In a controlled study by Cao B et al., 99 hospitalized patients with severe COVID-19 were given Lopinavir/ritonavir, and no difference was found with the control group in terms of time to recovery and mortality.[32]

Favipiravir, another antiviral medicine, inhibits viral replication. It was used effectively in the 2014 influenza virus pandemic in China. Cai et al. administered favipiravir+interferon- alpha to 35 COVID-19 for 14 days and Lopinavir/ritonavir+interferon alpha to 45 patients in a non-randomized controlled study and reported a more significant decrease in viral clearance and improvement in chest tomography in the favipiravir group.[33] Chan et al. randomized 116 patients to receive favipravir+conventional treatment for COVID-19 pneumonia and 120 patients to receive arbidol+ conventional treatment, an antiviral drug effective against influenza virus, and reported higher clinical improvement on the 7th day in the favipravir group.[34] In our study, 173 (14.9%) patients used Lopinavir/ritonavir and 193 (16.6%) patients used favipravir. We found that the use of both drugs significantly reduced intensive care and mortality.

In summary; advanced age, hypertension, heart, kidney and neurological disease, presence of COPD and cancer, cough, shortness of breath, malaise and fatigue, low blood sugar, creatinine, AST, LDH, creatinine kinase, CRP, leukocyte, neutrophil elevation and low GFR, albumin, platelet and lymphocyte levels were found to be effective in intensive care and mortality. While the use of hydroxychloroquine +azitro appears to be protective in intensive care, the use of ritonavir+lopinavir, favipravir, methylprednisolone and enoxaparin seems to reduce both intensive care and mortality. We think that our study has some limitations. First of all, our study is single-center and the number of patients taken to the intensive care unit is low. Since we could not see the follow- up of outpatient patients in the hospital records, that patient group was excluded from the study.

## CONCLUSSION:

Our study is a study describing the relationship between demographic, clinical and laboratory findings, prognosis and mortality of hospitalized COVID-19 patients. Advanced age and presence of comorbid diseases, elevated LDH, low platelet levels were associated with poor prognosis, and the use of favipravir and steroids could improve prognosis.

**Table Ⅰ: Overall results of patients**

| | | *All patients n=1161* | *Patients not taken to the intensive care unit n=1010* | *Patients taken into intensive care unit n=151* | *p* | *Living patients n=1040* | *Deceased patients n=104* | *p* |
|---|---|---|---|---|---|---|---|---|
| ***Age*** (years) | | 54,5± 14.3 | 53,4±14.0 | 61,4±14.5 | *<0.001* | 53,4±13.9 | 64,8±14.2 | *<0.001* |
| ***Male Gender*** | | 616 (%53.1) | 512(50.7) | 104(68.9) | <0.001 | 534(%51.3) | 71(%68.3) | *0,001* |
| ***Length of service stay*** (days) | | 8,7±5.3 | 9,37±5.14 | 4,27±4.31 | *<0.001* | 9,27±5.15 | 3,57±4.01 | *<0.001* |
| ***Length of Ic stay*** (days) | | 12,4±11.0 | - | 12,4±11.0 | - | 13,8±11.1 | 11,7±11.1 | 0,212 |
| ***Length of total stay*** (days) | | 9,1±5.0 | 8,61±4.52 | 12,95±6.97 | <0.001 | 8,93±4.70 | 11,53±7.37 | *<0.001* |
| ***Additional disease*** | | 598(%52.3) | 506(%50.3) | 92(%67.2) | <0.001 | 522(%50.4) | 67(73.6) | *<0.001* |
| ***CT Findings*** | ***Normal*** | 3(%0.3) | 2(%0.2) | 1(%0.8) | 0,175 | 3(%0.3) | 0(%0.0) | 0,068 |
| | ***Typical*** | 1073(%96.1) | 951(%96.4) | 122(%93.8) | | 977(%96.4) | 79(%91.9) | |
| | ***Atypical*** | 41(%41) | 34(%3.4) | 7(%5.4) | | 34(%3.4) | 7(%8.1) | |
| ***At least 1 PCR (+)*** | | 610(%56.3) | 507(%53.5) | 103(%75.2) | *<0.001* | 525(%53.7) | 78(%81.3) | *<0.001* |
| ***Contact (+)*** | | 201(%23.2) | 176(%22.8) | 25(%26.3) | 0,443 | 187(%23.5) | 11(%18.0) | 0,327 |

**Table Ⅱ: Patients' symptoms**

| *Symptom* | *All patients n=1161(%)* | *Patients not taken to the intensive care unit n=1010(%)* | *Patients taken into intensive care unit n=151(%)* | *p* | *Living patients n=1040(%)* | *Deceased patients n=104(%)* | *P* |
|---|---|---|---|---|---|---|---|
| ***Fever*** | 495(42.6) | 439(43.5) | 56(37.1) | 0158 | 452(43.5) | 37(35.6) | 0,145 |
| ***Cough*** | 740(63.7) | 667(66.0) | 73(48.3) | p<0,001 | 682(65.6) | 49(47.1) | *p<0,001* |
| ***Phlegm*** | 32(2.8) | 30(3.0) | 2(1.3) | 0,420 | 31(3.0) | 1(1.0) | 0,353 |
| ***Shortness of breath*** | 367(31.6) | 288(28.5) | 79(52.3) | *p<0,001* | 310(29.8) | 54(51.9) | *p<0,001* |
| ***Nausea-Vomiting*** | 83(7.1) | 74(7.3) | 9(6.0) | 0,615 | 77(7.4) | 5(4.8) | 0,426 |
| ***Malaise and Fatigue*** | 300(25.8) | 282(27.9) | 18(11.9) | *p<0,001* | 284(27.3) | 14(13.5) | *p<0,001* |
| ***Muscle-joint pain*** | 114(9.8) | 105(10.4) | 9(6.0) | 0,106 | 107(10.3) | 7(6.7) | 0,304 |
| ***Throat Pain*** | 62(5.3) | 56(5.5) | 6(4.0) | 0,560 | 56(5.4) | 5(4.8) | 1,000 |
| ***Headache*** | 63(5.4) | 57(5.6) | 6(4.0) | 0,562 | 59(5.7) | 4(3.8) | 0,650 |
| ***Abdominal Pain*** | 20(1.7) | 19(1.9) | 1(0.7) | 0,500 | 19(1.8) | 0(0.0) | 0,406 |
| ***Chest Pain*** | 28(2.4) | 22(2.2) | 6(4.0) | 0,247 | 26(2.5) | 2(1.9) | 1,000 |
| ***Diarrhea*** | 39(3.4) | 38(3.8) | 1(0.7) | 0,050 | 38(3.7) | 1(1.0) | 0,250 |
| ***Ageusia*** | 8(0.7) | 8(0.8) | 0(0.0) | 0,606 | 8(0.8) | 0(0.0) | 1,000 |

**Table Ⅲ: Patients' comorbidities**

| *Additional diseases* | *All patients n=1161(%)* | *Patients not taken to the intensive care unit n=1010(%)* | *Patients taken into intensive care unit n=151(%)* | *p* | *Living patients n=1040(%)* | *Deceased patients n=104(%)* | *P* |
|---|---|---|---|---|---|---|---|
| ***Hypertension*** | 331(28.8) | 279(27.6) | 52(37.1) | *0,020* | 288(27.7) | 38(40.4) | *0,009* |
| ***Diabetes*** | 283(24.6) | 245(24.3) | 38(27.1) | 0,458 | 246(23.7) | 32(34.0) | *0,025* |
| ***Hyperlipidemia*** | 42(3.7) | 36(3.6) | 6(4.3) | 0,670 | 38(3.7) | 4(4.3) | 0,773 |
| ***Heart disease*** | 134(11.7) | 102(10.1) | 32(22.9) | *p<0,001* | 107(10.3) | 24(25.5) | *p<0,001* |
| ***Liver disease*** | 10(0.9) | 8(0.8) | 2(1.4) | 0,349 | 9(0.9) | 1(1.1) | 0,581 |
| ***Kidney disease*** | 45(3.9) | 29(2.9) | 16(11.4) | *p<0,001* | 31(3.0) | 14(14.9) | *p<0,001* |
| ***Asthma*** | 63(5.5) | 56(5.5) | 7(5.0) | 0,791 | 55(5.3) | 7(7.4) | 0,379 |
| ***COPD*** | 28(2.4) | 19(1.9) | 9(6.4) | *0,004* | 19(1.8) | 9(9.6) | *p<0,001* |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ***Thyroid disease*** | 27(2.3) | 26(2.6) | 1(0.7) | 0,239 | 26(2.5) | 1(1.1) | 0,720 |
| ***Neurological disease*** | 25(2.2) | 18(1.8) | 7(5.0) | *0,025* | 20(1.9) | 5(5.3) | *0,049* |
| ***Cancer*** | 23(2.0) | 16(1.6) | 7(5.0) | *0,016* | 17(1.6) | 6(6.4) | *0,009* |
| ***Obesity*** | 2(0.2) | 2(0.2) | 0(0.0) | 1,000 | 2(0.2) | 0(0.0) | 1,000 |

**Table Ⅳ: Laboratory results of patients**

| | ***All patients (n=1161)*** | ***Patients not taken to the intensive care unit n=1010*** | ***Patients taken to the intensive care unit n=151*** | **p** | ***Living Patients n=1040*** | ***Deceased patients n=104*** | **p** |
|---|---|---|---|---|---|---|---|
| ***Glucose*** (mg/dl) | 144,2±70.7 | 140,5±65.1 | 171,2±99.0 | <0.001 | 41,3±65.5 | 174,5±107.8 | 0,009 |
| ***Uric acid*** ( mg/dl) | 5,55±5.96 | 5,57±6.44 | 5,42±1.94 | 0,357 | 5,64±6.46 | 5,41±2.08 | 0,563 |
| ***Creatinine*** (mg/dl) | 0,99 ±0.99 | 0,92±0.64 | 1,57±2.19 | 0,001 | 0,94±0.81 | 1,65±2.03 | <0.001 |
| ***GFR(***mL/min/1.73 m2) | 88,3±25.1 | 90,5±23.6 | 72,7±30.1 | <0.001 | 90,4±23.7 | 65,2±29.4 | <0.001 |
| ***AST (***U/L) | 39,4±28.3 | 38,0±27.2 | 49,5±33.8 | <0.001 | 38,2±27.2 | 51,8±37.2 | <0.001 |
| ***ALT (***U/L) | 29,3±28.2 | 29,3±29.1 | 29,1±20.6 | 0,498 | 29,5±28.9 | 28,0±21.3 | 0,722 |
| ***LDH (***U/L) | 298,4±115.4 | 286,8±99.4 | 383,1±174.4 | <0.001 | 288:6±101.7 | 405,9±181.1 | <0.001 |
| ***Creatinine kinase((***U/L)) | 183,2±234.4 | 169,6±212.1 | 253,9±320.2 | 0,018 | 168..3±208.4 | 301,6±366.9 | 0,025 |
| ***Troponin*** (pg/mL) | 3242±11277 | 2930±10837 | 4793±13262 | <0.001 | 3039±10982 | 3894±12136 | <0.001 |
| ***Albumin*** (g/L) | 3,8±0.40 | 3,9±0.35 | 3,4±0.5 | <0.001 | 3,8±3.4 | 3,4±0.5 | <0.001 |
| ***Amylase (***U/L) | 67,8±34.7 | 67,8±33.9 | 67,9±40.7 | 0,953 | 67,3±33.8 | 74,1±43.8 | 0,350 |
| ***Lipase (***U/L) | 36,6±45.0 | 36,8±46.2 | 34,9±36.1 | 0,129 | 36,1±45.7 | 41, 5±39.2 | 0,826 |
| ***Ferritin*** (ng/mL) | 241,2±285.0 | 225,1±271.7 | 398,9±367.0 | 0,015 | 226,0±273.8 | 355,7±390.2 | 0,102 |
| ***CRP (***mg/L) | 59,9±58.2 | 52,8±49.9 | 111,5±83.0 | <0,001 | 54,4±52.5 | 119,8±80.9 | <0,001 |
| ***Procalcitonin (***ng/mL) | 0,11±0.14 | 0,07±0.07 | 0,37±0.19 | <0.001 | 0,09±0.12 | 0,32±0.24 | 0,017 |
| ***pT (%)*** | 103,1±19.8 | 105,6±14.4 | 94,9±30.5 | <0,001 | 104,8±14.7 | 96,2±34.4 | 0,002 |
| ***apTT*** (sn) | 24,3±5.7 | 23,6±3.3 | 26,6±9.8 | 0,022 | 23,7±3.5 | 27,1±10.5 | 0,005 |
| ***Fibrinogen (***mg/dl) | 517,7±133.1 | 496,4±128.7 | 605,6±117.3 | 0,011 | 510,8±137.9 | 557. 0±97.5 | 0,351 |
| ***D Dimer*** (mg/L) | 1,25±3.87 | 0,78±0.81 | 5,56±11.42 | 0,088 | 1,31±4.09 | 0,85±0.53 | 0,570 |
| ***Hemoblobin (***g/dl) | 13,3±1.6 | 13,4±1.6 | 13,2±2.1 | 0,751 | 13,4±1.6 | 12,9±2.3 | 0,328 |
| ***Leukocyte (***10▲3/uL) | 6876±2988 | 6734±2837 | 7927±3783 | 0,003 | 6794±2904 | 7669±3749 | 0,064 |
| ***Platelet*** (10▲3/uL) | 212,8±77.9 | 215,4±77.0 | 193,7±82.6 | <0.001 | 214,4±77.1 | 190,8±79.1 | 0,002 |
| ***Neutrophil*** ( 10 ▲ 3/ uL) | 4,7±2.57 | 4,51±2.34 | 6,10±3.58 | <0.001 | 4,58±2.44 | 5,92±3.50 | <0,001 |
| ***Min lymphocyte*** (10 ▲ 3 / uL) | 1,53±1.05 | 1,57±1.07 | 1,25±0.79 | <0.001 | 1,56±1.07 | 1,18±0.76 | <0,001 |
| ***Lenfosit*** (%) | 23,9±10.1 | 24,7±9.8 | 17,7±10.0 | <0,001 | 24,5±9.9 | 17,3±9.7 | <0,001 |
| ***Min eosinophils*** (10 ▲ 3 / uL) | 0,04±0.10 | 0,04±0.11 | 0,02±0.08 | 0,038 | 0,04±0.10 | 0,03±0.09 | <0.001 |

**Table Ⅴ: Treatments of all inpatients**

| | **All patients n=1161(%)** | **Those not taken to the intensive care unit n=1010 (%)** | **Those taken to the intensive care unit n=151(%)** | **p** | **Living patients n=1040** | **Deceased patients n=104** | **P** |
|---|---|---|---|---|---|---|---|
| Hydroxychloroquine | 994(85.6) | 880(87.1) | 114(75.5) | <0,001 | 909(87.4) | 77(74.0) | <0,001 |
| Azithromycin | 1038 (89.4) | 911(90.2) | 127(84.1) | 0,023 | 934(89.8) | 92(88.5) | 0,667 |
| Oseltamivir | 815(70.2) | 703(69.6) | 112(74.2) | 0,252 | 730(70.2) | 78(75.0) | 0,305 |
| Ritonavir+Lopinavir | 173(14.9) | 115(11.4) | 58(38.4) | <0.001 | 130(12.5) | 39(37.5) | <0.001 |
| Favipravir | 193(16.6) | 112(11.1) | 81(53.6) | <0.001 | 139(13.4) | 51(49.0) | <0.001 |
| Tocilizumab | 24(2.1) | 18(1.8) | 6(4.0) | 0,114 | 21(2.0) | 3(2.9) | 0,474 |
| Methylprednisolone | 141 (12.1) | 28(2.8) | 113(74.8) | <0,001 | 66(6.3) | 73(70.2) | <0,001 |
| Enoxaparin | 781(67.3) | 645(63.9) | 136(90.1) | <0,001 | 681(65.5) | 93(89.4) | <0,001 |

**Table Ⅵ: Logistic regression analysis in patients taken and not taken to the intensive care unit**

| | ***B*** | ***S.E.*** | ***WALD*** | ***df*** | **p** | ***Exp (B)*** |
|---|---|---|---|---|---|---|
| **Age** | 0,025 | 0,012 | 4,178 | 1 | 0,041 | 1,025 |
| **Sex** | 0,331 | 0,323 | 1,047 | 1 | 0,306 | 1,392 |
| **CRP** | 0,005 | 0,003 | 2,847 | 1 | 0,092 | 1,005 |
| **Platelets** | -0,004 | 0,002 | 3,698 | 1 | 0,054 | 0,996 |
| **Lymphocytes** | -0,029 | 0,019 | 2,392 | 1 | 0,122 | 0,971 |
| **Additional disease** | -0,972 | 0,362 | 7,209 | 1 | 0,007 | 0,378 |
| ***Hydroxychloroquine*** | 1,025 | 0,410 | 6,234 | 1 | 0,013 | 2,786 |
| **Methylprednisolone** | -3,812 | 0,361 | 111,431 | 1 | 0,000 | 0,022 |
| **Favipravir** | -0,694 | 0,346 | 4,020 | 1 | 0,045 | 0,500 |
| **Oxaparin** | -0,225 | 0,459 | 0,239 | 1 | 0,625 | 0,799 |
| **Azitro** | 0,541 | 0,527 | 1,053 | 1 | 0,305 | 1,717 |
| **LDH** | 0,003 | 0,001 | 6,550 | 1 | 0,010 | 1,003 |
| **Dyspnea** | -0,013 | 0,325 | 0,002 | 1 | 0,969 | 0,987 |
| **Malaise and fatigue** | 1,140 | 0,423 | 7,247 | 1 | 0,007 | 3,126 |
| **Constant** | -0,956 | 1,256 | 0,579 | 1 | 0,441 | 0,384 |

**Table Ⅶ: Logistic regression analysis of living and deceased patients**

| | ***B*** | ***S.E.*** | ***WALD*** | ***Df*** | **p** | ***Den (B)*** |
|---|---|---|---|---|---|---|
| ***Age*** | 0,041 | 0,012 | 11,092 | 1 | 0,001 | 1,042 |
| ***Sex*** | 0,386 | 0,330 | 1,365 | 1 | 0,243 | 1,471 |

| | | | | | | |
|---|---|---|---|---|---|---|
| ***CRP*** | 0,004 | 0,003 | 2,311 | 1 | 0,128 | 1,004 |
| ***Platelets*** | -0,006 | 0,002 | 5,823 | 1 | 0,016 | 0,994 |
| ***Lymphocytes*** | -0,020 | 0,019 | 1,101 | 1 | 0,294 | 0,981 |
| ***Additional disease*** | -1,113 | 0,371 | 8,991 | 1 | 0,003 | 0,328 |
| ***Hydroxychloroquine*** | 0,588 | 0,416 | 1,994 | 1 | 0,158 | 1,800 |
| ***Methylprednisolone*** | -2,410 | 0,354 | 46,287 | 1 | 0,000 | 0,090 |
| ***Favipravir*** | -0,713 | 0,356 | 4,010 | 1 | 0,045 | 0,490 |
| ***Oxaparin*** | 0,266 | 0,455 | 0,342 | 1 | 0,559 | 1,305 |
| ***LDH*** | 0,004 | 0,001 | 12,273 | 1 | 0,000 | 1,004 |
| ***Dyspnea*** | -0,042 | 0,334 | 0,016 | 1 | 0,900 | 0,959 |
| ***Malaise and fatigue*** | 0,563 | 0,404 | 1,941 | 1 | 0,164 | 1,756 |
| ***Constant*** | -3,126 | 1,280 | 5,969 | 1 | 0,015 | 0,044 |

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