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ORIGINAL

Comparative study of clinical symptoms, laboratory and radiological findings of COVID-19 patients admitted to ICU ward with internal ward of Forghani Hospital in Qom: a case series

Estudio comparativo de síntomas clínicos, hallazgos de laboratorio y radiológicos de pacientes COVID-19 ingresados en la sala de UCI con sala interna del Hospital Forghani en Qom: una serie de casos

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Abstract

This analytical study was performed in Forqani Hospital of Qom from April to June of the year with the aim of comparing laboratory and radiological findings in patients with coronavirus 2020. Laboratory and radiological findings were performed between 50 patients with coronary artery hospitalization in the inpatient ward and 50 patients admitted to the ICU of Qom. After collecting information, data analysis was performed with SPSS24 software. "In patients admitted to the inpatient ward, the age of patients was 54 ±2.29 years and 54% were male and the mean age of patients admitted to intensive care units was 60 + 2 +01 years and 64% were male. Based on radiological findings in patients admitted to the inpatient ward and ICU, bilateral lung involvement was 68% and 84%, respectively (p <0.05). The finding of grand glass in the lungs in patients admitted to the inpatient ward was significantly higher than the ICU patients and also the finding of consolidation in the lungs in patients admitted to the ICU was significantly more than the patients admitted to the inpatient ward (P <0.05). In laboratory findings, there was a significant difference between WBC, lymphocyte, BUN and creatinine and CRP in patients admitted to the ICU with patients admitted to the inpatient ward (P <0.05). The results of this study show that in patients with coronavirus diagnosis, there was a significant difference in radiological and laboratory findings in patients with COVID-19 admitted to the inpatient and intensive care units such as blood oxygen levels, WBC, lymphocyte platelets, CRP, creatinine. There was a significant difference between urea and lung CT scan findings and diagnosis of lung consolidation in patients admitted to the ICU compared with patients admitted to the ward.

Keywords: Coronavirus infection, SARS CoV-2, critical care, clinical features.

Resumen

Este estudio analítico se realizó en el Hospital Forqani de Qom de abril a junio del año con el objetivo de comparar los hallazgos de laboratorio y radiológicos en pacientes con coronavirus 2020. Se realizaron hallazgos de laboratorio y radiológicos entre 50 pacientes con coronavirus ingresados en la sala de hospitalización y 50 pacientes ingresados en la UCI de Qom. Tras recoger la información, se realizó el análisis de los datos con el software SPSS24. En los pacientes ingresados en la sala de hospitalización, la edad de los pacientes era de 54 ± 2/29 años y el 54% eran hombres y la edad media de los pacientes ingresados en las unidades de cuidados intensivos era de 60 ± 2 ± 01 años y el 64% eran hombres. Según los hallazgos radiológicos en los pacientes ingresados en la sala de hospitalización y en la UCI, la afectación pulmonar bilateral fue del 68% y del 84%, respectivamente (p <0,05). El hallazgo de gran vidrio en los pulmones en los pacientes ingresados en la sala de hospitalización fue significativamente mayor que en los pacientes de la UCI y también el hallazgo de consolidación en los pulmones en los pacientes ingresados en la UCI fue significativamente mayor que en los pacientes ingresados en la sala de hospitalización (p <0,05). En cuanto a los resultados de laboratorio, hubo una diferencia significativa entre el recuento de glóbulos blancos, los linfocitos, el BUN, la creatinina y la PCR en los pacientes ingresados en la UCI y en los pacientes ingresados en la sala de hospitalización (P <0,05). Los resultados de este estudio muestran que en los pacientes con diagnóstico de coronavirus hubo una diferencia significativa en los hallazgos radiológicos y de laboratorio en los pacientes con COVID-19 ingresados en la sala de hospitalización y en las unidades de cuidados intensivos, como los niveles de oxígeno en sangre, los glóbulos blancos, los linfocitos, las plaquetas, la PCR y la creatinina. Hubo una diferencia significativa entre los hallazgos de la urea y la tomografía computarizada de pulmón y el diagnóstico de consolidación pulmonar en los pacientes ingresados en la UCI en comparación con los pacientes ingresados en la sala.

Palabras clave: Coronavirus infection, SARS CoV-2, critical care, clinical features

Introduction

SARS-CoV-2 (The Severe Acute Respiratory Syndrome Coronavirus 2), formerly known as the New Coronavirus (2019-Ncov), is a new virus that appeared in December 2019 and causes COVID-19[1]. The virus causes a syndrome that in some cases can lead to a dangerous respiratory condition, which will require specialized management of the disease in the ICU[2] It is also known as an intensive care unit. It is the seventh known coronavirus to infect humans. Other beta-coronaviruses have already caused other epidemics in the last two decades in Asia, such as SARS-COV from 2002 to 2003 in China and later from 2012 to 2013 in Saudi Arabia as MERS-COV[3]. Similarities and differences observed in epidemiology, clinical manifestations and treatment of SARS, MERS and COVID, although the clinical form of SARS, MERS and COVID-19 is similar, differences have been observed in the initial reports[4]. Preliminary research has shown patterns in chest CXR and CT. For example, an early prospective study in Wuhan showed 98% (40 out of 41 cases) of bilateral CT chest involvement among patients, with consolidation being the most common finding in this study[5]. Other researchers have examined chest CT in patients, the appearance of grand-glass and consolidation was common among patients[8].

Covid-19 is an emerging disease and its clinical, laboratory and radiological characteristics are unknown and there are many differences in different studies. Human-to-human transmission is common in this disease. Respiratory droplets and human-to-human communication are the main routes of transmission of the virus. In the early stages of the disease, symptoms of acute respiratory infection are observed, and a number of patients quickly develop ARDS and other severe symptoms, which eventually lead to organ damage. Historically, coronaviruses have been formally identified as a new viral family in the 1960s following the discovery of several new human respiratory pathogens. These viruses are known to have structures on their surface called spikes. Almost 40 years after the identification of this group of viruses and in late 2002 and early 2003, a coronavirus caused severe respiratory complications in humans known as SARS (COAR) or Acute Respiratory Syndrome[8]. The sudden emergence of SARS led to new research to understand the main mechanisms of reproduction and pathogenicity of members of this viral family with the aim of controlling them worldwide. The outbreak of SARS-COV infected 8096 people and killed 794 people and the mortality rate of this virus was 9.8%. Then in 2012, another virus of this family broke out again in the Middle East, especially in Saudi Arabia, called MERS (MERS-COV), infecting a total of 2.260 people and causing 35.5% human deaths. Seven years after the onset of Morse disease, the onset of COVID 19 disease by RNA - SARS-CoV-2 virus in December 2019 in Wuhan City, Hui Province, China, was associated with symptoms of acute respiratory syndrome and widespread and rapid outbreak. The moon reached the stage of a global epidemic[9]. In late December 2019, a series of unexplained cases of pneumonia were reported in Wuhan, China. The government and health researchers in China took swift action to control the epidemic, and began etiological research[10]. On January 12, 2020, the WHO temporarily named the new virus as the New Coronavirus-2019. In the present study, the same phrase "New Coronavirus-2019" has been used[11]. On January 30, 2020, the WHO announced the New Coronavirus Epidemic 2019 as an International Public Health Emergency (PHEIC)[12]. On February 11, 2020, the WHO officially named the disease caused by the New Coronavirus Disease 2019 (COVID-19). On the same day, the International Virus Classification Committee (CSG) Study Group named it Severe Acute Respiratory Syndrome, and on February 23, 2020, 77041 cases of Covid-19 infections were confirmed in China. This number of infections has exceeded the prevalence of Acute Respiratory Syndrome (SARS) in China in 2002[13].

Structure of Coronavirus-2019 Coronaviruses are enveloped, non-segmented viruses with single-stranded, Positive-sense RNA of animal origin and belong to the family Corona. The size of the virus genome is between 26 and 32 kg, which is one of the largest RNA viruses. These viruses have two different types of surface proteins and get their name from this appearance. The family of coronaviruses is serologically divided into four genera: alpha, beta, gamma and delta[14]. Approximately 30 types of coronavirus have been identified in humans, mammals and birds. Human coronaviruses are caused by alpha and beta genera. Coronaviruses are one of the most common viruses, with 30 to 60 percent of the population having antibodies against it[15]. New Coronavirus-2019 (SARS-COV-2) is a beta-coronavirus coronavirus. Covid-19 is the third known animal coronavirus disease after SARS and MERS Middle East Respiratory Syndrome, both of which belong to the beta-coronavirus category[16]. Origin of New Coronavirus-2019 an epidemiological study of early cases of modern coronavirus pneumonia-2019 showed that many cases were exposed to the Hanan seafood market in Wuhan, China[17]. The WHO report also states that the new Carnavirus-2019 has been detected in environmental samples collected from Hanan seafood markets[18]. But it is not yet clear what specific species of animals will carry the new coronavirus-2019. 33 of the 585 environmental samples available in the Hanan Seafood Market were positive for New Coronavirus-2019. Some of these include a variety of live animals, such as hedgehogs, badgers, snakes, turtles, birds, and possibly anteaters, but bats do not[19]. Therefore, bats were not likely to have direct contact with humans and did not have direct transmission to humans, and direct transmission of the virus from bats to humans seems unlikely[20]. A study by Ji et al. Showed that the New Coronavirus-2019 is a chimeric virus between bat coronavirus and coronavirus

of unknown origin. Compared to other animals, they found that snakes are very likely to be the reservoir of the new coronavirus-2019[21]. A study by Benvenuto et al. Showed that the New Coronavirus 2019 is closely related to closely isolated coronaviruses of a particular type of Chinese bat[22]. Their research supports the theory that the chain of transmission from bats to humans has begun. Chan et al. confirmed that the new coronavirus-2019 was a new coronavirus highly associated with the SARS bat coronavirus[23]. Recently, Zhou et al. And Wu et al. found that the sequence similarity between New Coronavirus 2019 and SARS coronavirus is 79.5%. They also found that the new coronavirus-2019 is highly homologous to bat coronavirus. Thus, current evidence strongly supports that New Cronavirus-2019 was derived from bats, although the intermediate or intermediate hosts of New Cronavirus-2019 are not yet known[24].

The study by Wang et al. showed that from January 10 to 24, 2020, the number of people infected with Covid-19 infection in China increased 31.4 times. On February 23, 2020, the number of patients with Covid-19 in China was 1879, equal to January 10, 2020. They estimated the mortality rate of Covid-19 based on the number of patients at 2.84%. The researchers also found that the male-to-female mortality rate was 3.25 to 1, the median age of death was 75 years, the median time from the first symptoms to death was 14 days, and the median time from initial symptoms to death in people 70 years of age and older (5/11 days) is shorter than people under 70 (20 days). These findings suggest that the disease may progress faster in adults than in young people[25]. The study by Li et al. Reported that the mean age of 425 patients infected with modern coronavirus-2019 was 59 years, of which 56% were male, the mean incubation period was 5.2 days, and approximately half of adult patients were 60 years and older. In the early stages, the number of infected patients doubled every 7.4 days. The rate of disease transmission from the infected person was 2.2. Although 55% of the first patients infected with Covid-19 were related to the Hanan seafood market, the number of unrelated cases has increased logarithmically since late December 2019[26]. Of the 41 patients with Covid-19 infection in their study, Huang et al. Showed that 73% of patients were male and 32% of patients had underlying diseases including diabetes (8 patients), hypertension (6 patients), and diseases. Were cardiovascular (6 patients). He was 49 years old. Of the 41 patients, 27 were related to the Hanan seafood market. The mortality rate of coronavirus patients in this study was reported to be 15%[27]. The study by Wu et al. estimated the transmission rate of infected patients to be 0.3. The mortality rate of patients with coronavirus in this study was reported to be 14%[28]. Preliminary studies have shown that people with underlying diseases are at higher risk for complications and mortality from Covid-19 disease. Approximately 50% of hospitalized patients suspected of having a new coronavirus have other chronic diseases, and about 40% of hospitalized patients with confirmed new SARS-COV-2 coronavirus infection have cardiovascular or cerebrovascular disease. They are vascular. The researchers also found large differences in mortality by age group, with Guan et al. Reporting 1,099 cases of Covid-19 infection. They found that fever of 87.9% and cough of 67.7% were the most common symptoms. Diarrhea 3.7% and vomiting 5% were rare. Abnormalities in chest CT images were observed in 96% of patients infected with Covid-19 and in 82.1% of them lymphopenia was recorded[29]. In the study of the radiological findings of 81 patients with COVID-19 in Wuhan, China: A descriptive study of 81 patients with COVID-19, in which 42 men and 30 women participated and the mean age of the company they are equal to 49.5 years. The average number of lung segments involved is 10.5. The most common patterns of bilateral involvement were 79%, peripherals 54%, grand glass 65%, and the lower lobe of the lung 27%. Symptoms are as follows: 73% fever, shortness of breath 70%, cough 59%, sputum 19%, weakness 9%, vomiting 5%, headache 6%, dizziness 2%, diarrhea 4%. The mean of laboratory findings is also reported as follows: WBC 8100, Lymphocyte 1100, Platelet 212200, Hemoglobin 12.3, CRP 6.47, ALT 2.46, AST 40.8, D-dimer 6.5. In Wang et al.'s study entitled Frequency and Distribution of Chest Radiographic Findings in COVID-19 Patients, 64 patients were studied. The study involved 26 men and 38 women, and the average age of patients was 56 years. 31% of patients had normal CXR. 59% of patients had consolidation and 41% had left lung involvement. 63% of patients had significant lower lung involvement and none of the patients had upper lung involvement. PE was also observed in 2% of patients, pulmonary nodules were not observed in any of the patients[30&33].

In a study by Burnheim et al. Entitled Chest CT Findings in Coronavirus Disease: Relationship to Duration of Infection, 121 symptomatic patients were studied. In this study, 61 men and 60 women were studied, the average age of the participants was 45.3 years. The radiological appearance of 22% of patients was normal, 34% of patients with radiological changes had only a grand glass view, 2% did not have a consolidation view, and the rest of the patients had both a grand glass view and consolidation. 15% of patients had single lobe involvement, 12% had two lobe involvement, 9% had 3 lobe involvement, 15% had 4 lobe involvement, and 27% had 5 lung involvement[34]. In a study by Ming Yin et al. Entitled COVID-19 infection imaging profile: radiological findings and review of sources, 21 patients were examined, of which 13 were male and 8 were female. 86% of patients had grand glass facade, 19% had grand glass nodules and 62% had consolidation. The two patients had no chest radiological changes. 86% of patients with peripheral involvement had 1 pre-hilar involvement. 90% of patients had fever, 48% cough, 15% sputum, 10% sore throat, 10% diarrhea and

5% chest pain. The mean of laboratory results was as follows: hemoglobin 13.8, WBC 5.3, neutrophils 3.33, lymphocytes 1.29, and platelets 169, PT 36, D-dimer 0.4, Na 139, K 3.86, and Urea 45/4. In a study by Xavi et al. Entitled Clinical Findings in a Group of COVID-19 Patients outside Wuhan, China: A retrospective case study, 62 COVID-19 patients were studied, 35 were female and 27 were male. The mean of laboratory findings was as follows: WBC 4.7, neutrophil 2.9, lymphocyte 1, hemoglobin 13.7, platelet 176, D-dimer 0.2, also 52 patients had bilateral lung involvement[35&36].

Research methods

The present study is an analytical study. In this study, 100 hospitalization cases related to Covid-19 were reviewed. Of these 100 patients, 50 were hospitalized in the inpatient ward and 50 were hospitalized in the ICU. Patients were selected from those whose diagnosis of COVID-19 was confirmed based on diagnostic methods and with the opinion of a pulmonologist. After selecting patients, information about clinical signs, laboratory and radiological findings are recorded in a researcher-made checklist. The prepared form had 3 sections to record the required information, the first part included demographic information of patients such as age, gender, duration of symptoms, and length of hospital stay, ward and the second part included laboratory findings such as WBC number, platelet count, ESR level, CRP, and the fourth part included radiological findings such as unilateral or bilateral pulmonary involvement, the presence of consolidation, grand glass view, etc.

Calculate the sample size

Considering alpha (first study error) as 0.05, d (study accuracy) as 0.1, P as 0.8, 100 people enter the study

$$N= \frac{[P(1-P)] \times (Z\ 1-\alpha/2)^2}{(d)^2} \rightarrow N= \frac{(0.54 \times 0.3) \times 5}{(0.1)^2} \rightarrow N= 50 \quad (1)$$

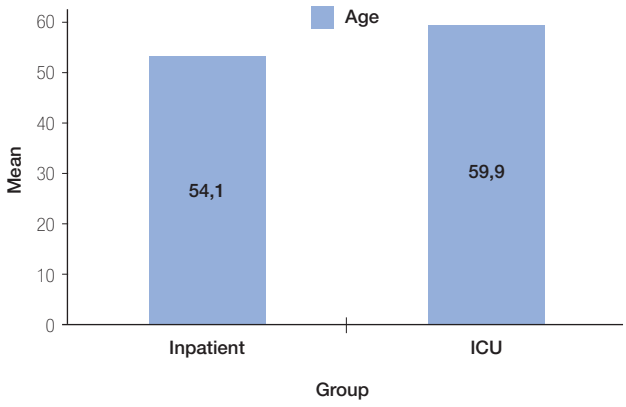
Data analysis method

The collected data were analyzed using SPSS24 statistical software and T-test at the significant level of P value <0.05.

Research results

In the present study, clinical symptoms, laboratory and radiological findings in patients with coronary artery in the ICU and the internal ward were compared, and the findings were presented in two descriptive and analytical sections. Age distribution of patients with coronary artery disease, the mean age of patients with coronary hospitalization in the inpatient ward was 54 + 2.29 years and the mean age of patients admitted to the intensive care unit was 60 + 2 + 01 years. The mean age of patients admitted to the ICU was higher than that of patients admitted to the ICU, but this difference was not significant (P = 0.06).

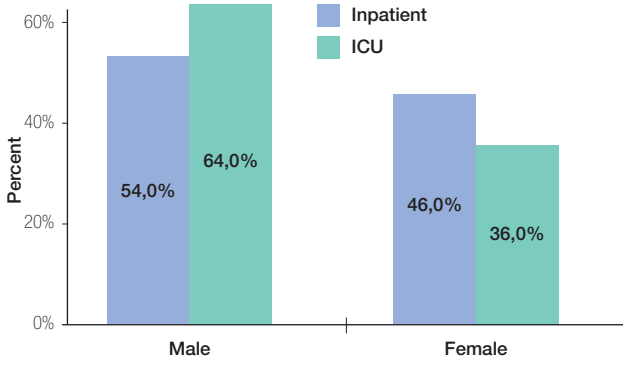
Figure 1: Comparison of the mean age of patients with coronary artery inpatient and ICU.



Gender distribution of patients with coronary artery disease

In patients with coronary hospitalization in the internal ward, 54% of patients were male and 46% female and in patients with coronary artery in the ICU, gender was 64% male and 36% female. Frequency of male patients admitted to the ICU compared to hospitalized patients It was higher in the internal part but this difference was not significant (P = 0.31).

Figure 2: Percentage of relative frequency of gender in patients with coronary artery in two groups.



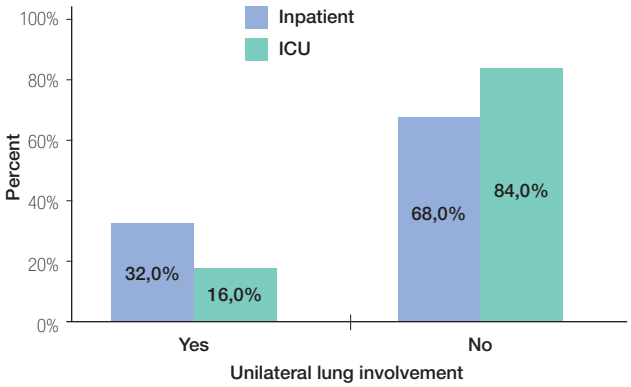
Radiological findings

Frequency of unilateral lung involvement in patients with coronary artery disease

In patients with coronary hospitalization in the internal ward, unilateral lung involvement was diagnosed in 32%

of patients and in patients with coronary hospitalization in the ICU, unilateral lung involvement was diagnosed in 16% of patients. The frequency of unilateral lung involvement in patients admitted to the inpatient ward was higher compared to patients admitted to the intensive care unit, which was a significant difference (P = 0.05).

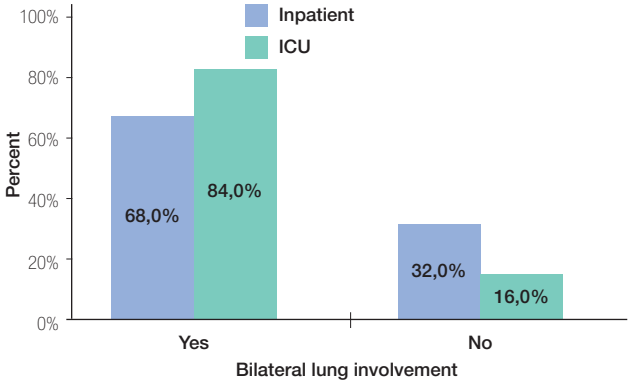
Figure 3: Percentage of relative frequency of unilateral involvement in coronary artery disease in the two groups.



Frequency of bilateral lung involvement in patients with coronary artery disease

Bilateral lung involvement was diagnosed in 68% of patients with coronary hospitalization in the internal ward and bilateral lung involvement was diagnosed in 72% of patients admitted to the ICU. The frequency of bilateral lung involvement in patients admitted to the intensive care unit was significantly higher compared to patients admitted to the intensive care unit (P = 0.048).

Figure 4: Percentage of relative frequency of unilateral involvement in patients with corona in the two groups.



Frequency of grand-glass, consolidation and nodules in the lungs of patients with coronavirus

In patients with coronary hospitalization in the inpatient ward, the diagnosis of grand-glass in 62%, grand glass / consolidation 32% and consolidation alone in 4% of patients and in patients with coronary hospitalization in the ICU diagnosis of grand glass lung in 14%, Grand - Glass / consolidation was 48% and consolidation alone in 38% of patients. In general, radiological findings of grand glass in patients admitted to the inpatient ward were higher than patients in the intensive care unit (P = 0.0001) and in patients admitted to intensive care units, more radiological findings were grand-glass / consolidation and consolidation alone. (0001/0 = P).

Figure 5: Relative frequency of Grand-Glass diagnosis in patients with coronary artery disease in the two groups.

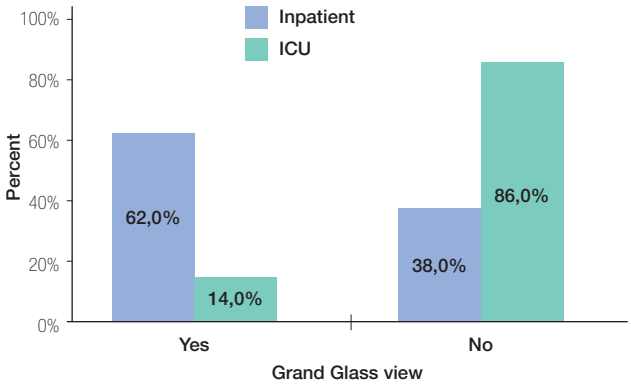


Figure 6: Relative frequency of Grand-Glass/Consolidation diagnosis in patients with coronary artery disease in the two groups.

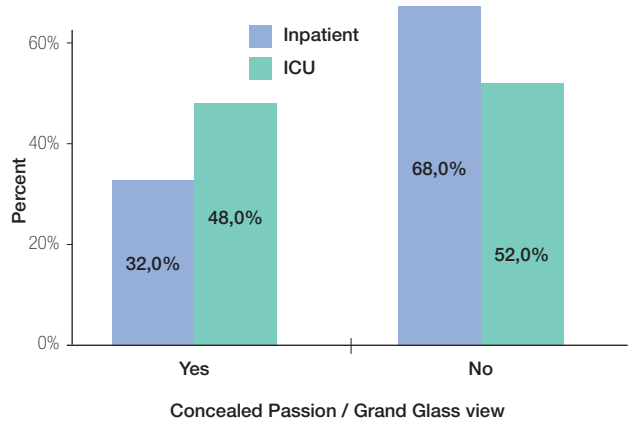
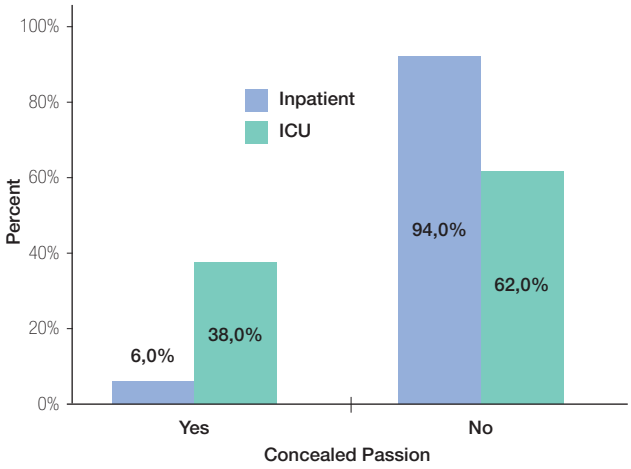


Figure 7: The relative frequency of the diagnosis of consolidation in patients with coronary artery disease in the two groups.

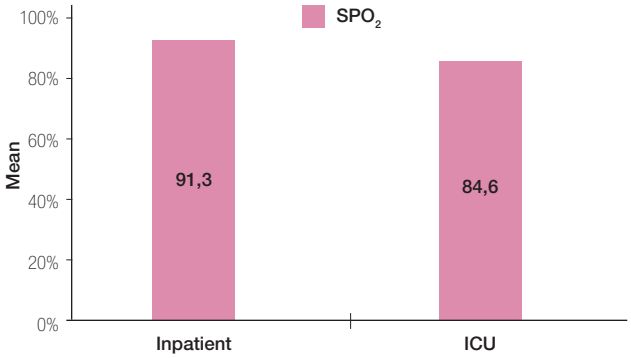


Laboratory findings

Comparison of blood oxygen levels in patients with coronary heart disease

In patients with coronary hospitalization in the inpatient ward, the mean SPO2 was 91.3 + 5.9% and in patients admitted to the intensive care unit was 84.6 + 10.7%. As it is known, blood oxygen level in patients with coronary artery in the ICU is significantly lower than patients in the inpatient ward (P = 0.0001).

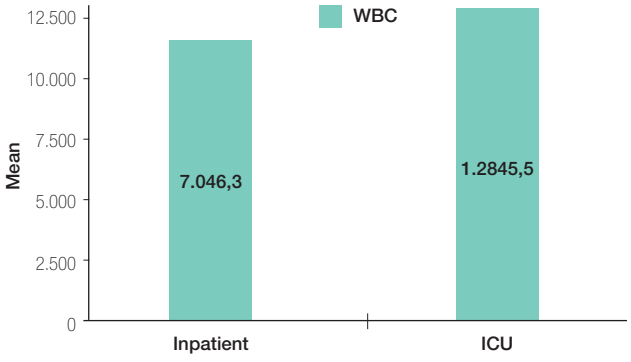
Figure 8: Comparison of mean SPO_2 in hospitalized patients.



Comparison of WBC changes in patients with coronary artery disease

In patients with coronary artery hospitalization in the inpatient ward, the mean of WBC was 7046.3 + 554.16 and in patients admitted to the intensive care unit was 12845 + 29.58 + 12845. As it is known, the number of WBCs in patients with coronary artery in the ICU was significantly higher than the patients in the inpatient ward (P = 0.045), which in most of these patients was leukocytosis.

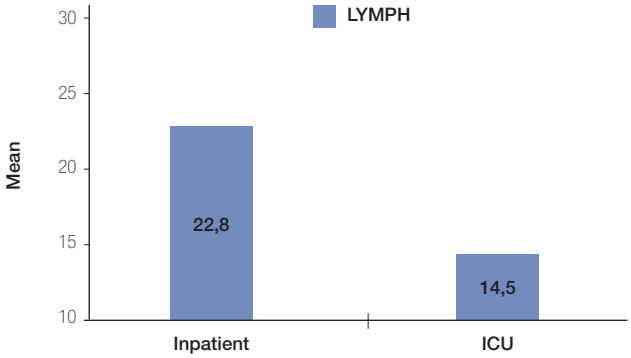
Figure 9: Comparison of mean white blood cell count in patients with coronary artery disease in the study groups.



Comparison of lymphocyte changes in patients with coronary artery disease

In patients with coronary artery hospitalization, the mean lymphocyte was 22.8 + 1.61 and in patients admitted to the intensive care unit was 14.5 + 1.56. As it is known, the number of lymphocytes in patients with coronary hospitalization in the ICU was significantly lower than patients admitted to the inpatient ward (P = 0.0001).

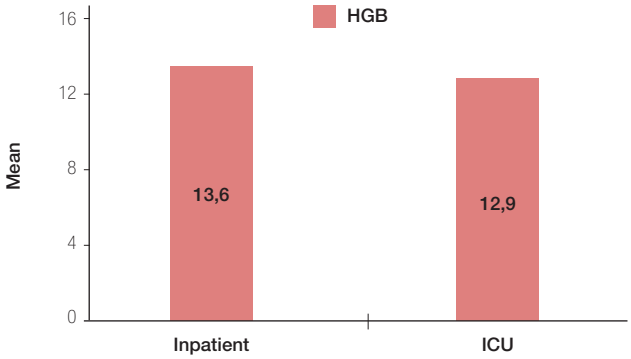
Figure 10: Comparison of the mean number of lymphocytes in patients with coronary artery disease in the study groups.



Comparison of hemoglobin changes in patients with coronary artery disease

In patients with coronary hospitalization in the inpatient ward, the mean hemoglobin was 13.6+ 1.53 and in patients admitted to the intensive care unit was 12.9 + 2.06. As it is clear that no significant difference was observed between serum hemoglobin levels in the two groups of patients (P = 0.07).

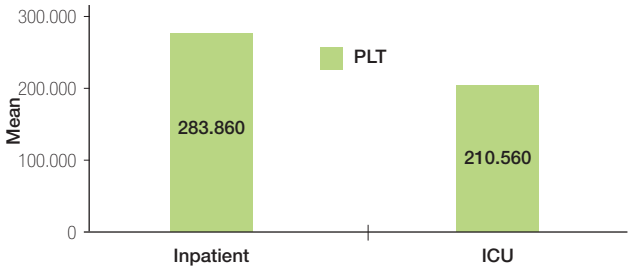
Figure 11: Comparison of mean hemoglobin in patients with coronary artery disease in the study groups.



Comparison of platelet changes in patients with coronary artery disease

In patients with coronary artery hospitalization in the internal ward, the mean platelet count was 283860 + 66364.19 and in patients admitted to the intensive care unit was 210560 + 9901/48. As it is clear that no significant difference was observed between platelet levels in the two groups of patients (P = 0.27). However, the mean platelet count was higher in the inpatient group compared to the ICU patients, which could be due to the administration of anticoagulants in the ICU patients.

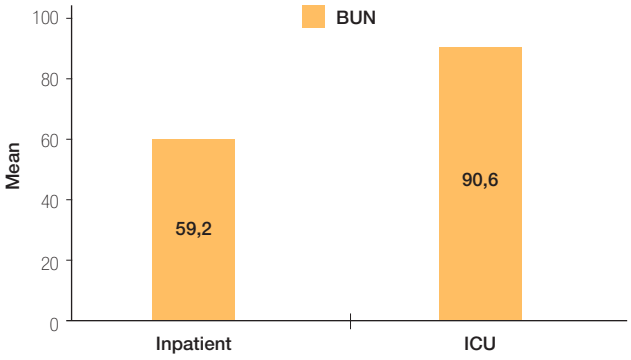
Figure 12: Comparison of mean platelets in patients with coronary artery disease in the study groups.



Comparison of changes in urea nitrogen (BUN) in patients with coronary artery disease

In patients with coronary hospitalization in the inpatient ward, the mean serum level of BUN was 59.2 + 64.88 and in patients admitted to the intensive care unit was 90.6 + 81.02. As it is known, there is a significant difference between serum BUN levels in the two groups of patients (P = 0.035). The mean BUN in the group of patients admitted to the inpatient ward was significantly lower compared to patients admitted to the ICU.

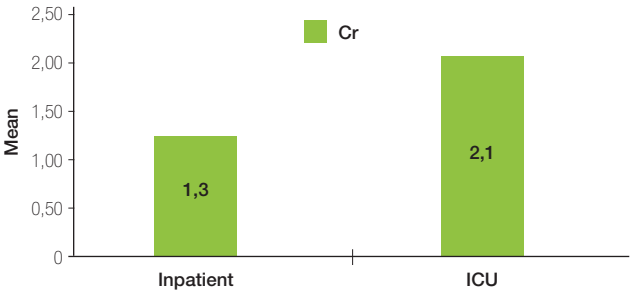
Figure 13: Comparison of mean BUN in patients with coronary artery disease in the study groups.



Comparison of creatinine (Cr) changes in patients with coronary artery disease

In patients with coronary hospitalization in the internal ward, the mean serum level of Cr is 1.32 + 0.21 and in patients admitted to the intensive care unit is 2.1 + 0.21. As it is known, there is a significant difference between serum creatinine levels in the two groups of patients (P = 0.014). The mean Cr in the group of patients admitted to the inpatient ward was significantly lower compared to patients admitted to the ICU.

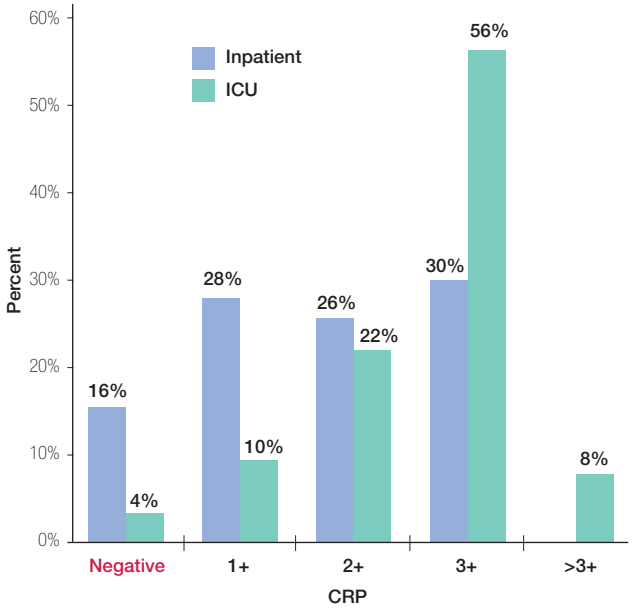
Figure 14: Comparison of mean creatinine in patients with coronary artery disease in the study groups.



Comparison of CRP index in patients with coronary artery disease

In patients with coronary hospitalization in the inpatient ward, CRP (qualitative) index in 16% (8 cases) negative, 28% (14 cases) +1, in 26% (13 cases) +2 and in 30% (15 cases) +3 and in patients admitted to the intensive care unit in 4% (2 cases) negative, in 10% (5 cases) +1, in 22% (11 cases) +2, in 56% (28 cases) +3 and in 8 % (4 cases) was more than +3. As it is known, there is a significant difference between the inflammatory index of CRP in the two groups of patients (P = 0.003). So that this index was significantly lower in the group of patients admitted to the inpatient ward compared to patients admitted to the ICU.

Figure 15: Percentage of CRP inflammatory index in patients with coronary artery disease in the study groups.



Discussion

In this study, which compared the laboratory and radiological findings of patients with COVID-19 admitted to the inpatient and intensive care units of Forghani Hospital in Qom, patients in two groups of 50 people were studied. According to the findings of this study, in patients admitted to the inpatient ward, the age of patients was 54.2 29 2.29 years and 54% were male patients and the mean age of patients admitted to intensive care units was 60 + 2.01 years and 64% of patients were male. The overall mean age and mortality of male patients in the ICU ward were higher (P <0.05). In patients admitted to the inpatient ward, unilateral lung involvement 32% of patients 68% bilateral involvement, and in patients with coronary hospitalization in ICU 16% of patients had unilateral lung involvement and 84% of patients had bilateral lung involvement (p <0.05) . In patients admitted to the inpatient ward, the mean SPO2 was 91.3 + 5.9% and in patients admitted to the intensive care unit was 84.6 + 10.7%. (0001/0 = P). In patients admitted to the inpatient department and ICU, respectively, the mean

of WBC was 7046.3 55 554.16 and 12845 + 29.08 + 0845 (P = 0.045), in most of these patients leukocytosis was present. The mean lymphocytes in patients admitted to the inpatient and ICU wards were 22.8 + 1.61 and 14.5 + 1.56, respectively (P = 0.0001). +1 was 6/13 and 6/02 + was 12.9 (P = 0.07). The mean platelet count was 283860 + 66364.19 and in patients admitted to the intensive care unit was 210560 + 9901/48 (P = 0.27). However, the mean platelet count was higher in the inpatient group compared to the ICU patients, which could be due to the administration of anticoagulants in the ICU patients. In patients admitted to the inpatient and intensive care units, the mean serum level of BUN was 59.2 + 64.88 and 90.6 + 81.02, respectively. As it is known, there is a significant difference between serum BUN levels in the two groups of patients (P = 0.035). In patients admitted to the inpatient ward and ICU, the mean serum level of Cr is 1.32 + 0.21 and 2.1 + 0.21, respectively. As it is known, there is a significant difference between serum creatinine levels in the two groups of patients (P = 0.014). The mean of Cr in the group of patients admitted to the inpatient ward was significantly lower compared to patients admitted to the ICU. Also, there was a significant difference between the inflammatory index of CRP in the two groups of patients (P = 0.003). . So that this index in the group of patients admitted to the inpatient ward was significantly lower compared to patients admitted to the ICU. In the study of colleagues and colleagues, which was conducted on 72 patients, 42 men and 30 women participated and the average age of the company The laboratory findings included: WBC 8100, lymphocyte 1100, platelet 212200, hemoglobin 12.3, CRP 6.47, ALT 2.46, AST 40.8, D-dimer 6.5 (68).). In my study, the laboratory findings of hemoglobin, platelets, and lymphocytes were consistent with the findings of this study, but the mean age of the patients in our study was higher than the mean age of the patients in this study.

Conclusion

Based on the findings of this study, there was a significant difference in radiological and laboratory findings in patients with COVID-19 hospitalized in the inpatient and intensive care units, such as blood oxygen levels, WBC, lymphocyte platelets, CRP, creatinine and urea and related findings. There was a significant difference between CT scan of the lung and diagnosis of lung consolidation in patients admitted to the ICU compared with patients admitted to the ward. Due to the significant difference between laboratory and radiological findings in patients with coronary artery, inpatient hospitalization with patients admitted to the ICU is recommended. If laboratory and radiological findings in patients with this study match, to provide medical services and care Patients in the decision-making of hospitalization of patients in special wards, decisions should be made that due to the widespread epidemic of this disease, special beds can be managed in medical centers.

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