The rate of smoking and drug addiction among patients with COVID-19 specially based on sex genetic factor

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ABSTRACT

The aim of this study was to determine the extent of tobacco and drug addiction to opium, methamphetamine and heroin in hospitalized patients due to COVID-19. In this cross-sectional descriptive study, the rate of smoking and drug addiction among COVID-19 patients admitted to Shahid Sadoughi hospital in Yazd was investigated. A total of 500 patients were studied and patient information such as smoking and drug use history, dosage, type of substance, length of hospital stay and severity of the disease were extracted in this paper. Then the data were entered into SPSS software and analyzed. No significant relationship was found between patients sex (Main genetic factor) and smoking with disease severity. Also, no significant relationship was found between smoking and length of hospital stay. Also, there was no significant difference between the severity of clinical symptoms in drug users and other subjects. In this study, the prevalence of smoking among COVID-19 patients was about 6.6 %.

***Keywords:** COVID-19, drug addiction, smoking, sex genetic factor*

INTRODUCTION

The new coronavirus was originally named the new 2019 Corona Virus (2019-nCoV) by the World Health Organization (WHO) [1,2].

This family of viruses cause various respiratory infections from cold to SARS and is now spreading rapidly around the world [3,4].

Risk factors for the disease include older age, male gender, high blood pressure, diabetes,

cardiovascular disease and respiratory disease [5]. Remarkably, the data examined on the effect of smoking on the clinical severity of COVID-19 have been controversial and there is an urgent need for further investigations [6].

Previous studies have shown that smokers were twice as likely as other people to be exposed to the flu and severe complications when exposed to the flu virus [7]. Smokers also had higher mortality rates during the MERS Cov (Middle East Coronavirus) epidemic [8].

Substance use disorders, characterized by mental, physical, behavioral, and anxiety symptoms, directly or indirectly kill millions of people each year [9]. Alcohol use and drug addiction are about 1.5 % of the causes of disease in the world and according to recent data may be as much as 5 % in some countries [10,11].

Given that so far limited studies are available about the involvement of smokers and drug users with the COVID-19 disease [12,13], the aim of this study was to determine the extent of tobacco and drug addiction (opium, methamphetamine and heroin) in hospitalized patients due to COVID-19.

MATERIALS AND METHODS

In this descriptive cross-sectional study, the inclusion criteria included patients with COVID-19 admitted to Shahid Sadoughi hospital in Yazd in the age range of 18 to 60 years whose PCR test was positive and their disease was confirmed. Exclusion criteria also included: incomplete patient records, patient non-cooperation to participate in the study and negative PCR result. Sampling was done by census among patients. Patients identification documents and characteristics related to the blood oxygen level at the time of arrival, presence or absence of addiction, type of substance used, duration of addiction and the number of days hospitalized were entered into a pre-prepared checklist.

The severity of the disease in patients was assessed based on blood oxygen levels (BOL) and classified as follows:

A: BOL > 93 %

B: BOL > 87 %

C: BOL < 87 %

Limitations of the study include: lack of access to contact numbers and identification information of some patients, minor deficiencies in the records of some patients, failure to mention blood oxygen levels at the time of entry in the records of some patients

and finally non-response of some patients about the type and duration of the addiction.

The obtained information was entered into SPSS software version 24. The data was then analyzed. All cases with p-value less than 0.05 were considered significant. Chi-square and ANOVA tests were used in the analytical section.

RESULTS

In this study, 500 cases with a minimum age of 18 years and a maximum age of 60 years with a mean age of 43.45 and a standard deviation of 10.56 were examined. The median age of patients was 44.00 and the first and second quarters were 34.00 and 53.00, respectively. Among the patients, 57.8 % were male (289) and 42.2 % were female (211).

The duration of hospitalization was at least one day and at most 42 days, with a mean duration of hospitalization of 6.77 days and a standard deviation of 4.53.

The mean length of hospital stay among patients who smoked was 6.35 days and the standard deviation was 3.57 and among patients who did not smoke, the mean length of hospital stay was 6.35 days with a standard deviation of 4.68.

In terms of disease severity, in general, 51.6 % had a severity of A (258 patients) (mild), 31.8 % had a severity of B (159 patients)

(moderate) and 16.6 % had a high severity of disease (C) (83 patients) (Severe).

In the study of severity of the disease by gender, among 289 male patients, 150 patients had the severity of a disease, 89 patients had the severity of B and 50 patients had the severity of C. Also, among 211 female patients, 108 patients had a disease severity, 70 patients had B disease severity and 33 patients had C disease severity.

Among the 500 patients studied, 14.8 % of patients had a history of tobacco consumption (6.6 % smokers, 8.2 % hookah), which was equivalent to 74 patients. Evaluation of disease severity among this group of patients was as follows: 37 patients with disease severity of A, 28 patients with disease severity of B and 9 patients with severity of C.

The rate of drug use in the study population was also assessed. 2.4 % (12 people) of patients mentioned a history of drug use. In assessing the severity of the disease among drug users, 6 patients had the severity of the disease A, 4 patients had the severity of the disease B and 2 patients had the severity of the disease C.

In this study, no significant relationship was also found between sex and disease severity (p=0.806) (Table 1). No significant relationship was found between smoking and length of hospital stay (p=0.386) (Table 2).

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No significant relationship was found between smoking and disease severity (p=0.355) (Table 3). There was no significant difference between the severity of the disease in narcotic drug users and other subjects (p=0.99) (Table 4).

Table 1. The disease severity based on sex (main genetic factor)

Disease severity	Sex	Number
A	Male	150
	Female	108
B	Male	89
	Female	70
C	Male	50
	Female	33
Total	Male	289
	Female	211
p-value	0.806	

Table 2. The hospital stay time based on smoking

Patients	Frequency	Mean of hospital stay time (day)
Patients without a history of smoking	426	6.85
Patients with a history of smoking	74	6.35
Total	500	6.77
p-value	0.386	

Table 3. The disease severity in patients with smoking

Disease severity	Frequency
A	37
B	28
C	9
Total	74
p-value	0.355

Table 4. The disease severity in narcotic drug users

Disease severity	Frequency
A	6
B	4
C	2
Total	12
p-value	0.99

DISCUSSION

At the present study, more patients were men that the severity of disease among men was as follows, 150 patients had the severity of A, 89 patients had the severity of B and 50 patients had the severity of C. A study conducted in New York City to examine the factors associated with hospitalization and the incidence of severe cases among 5,279 people with coronavirus in 2019 found a strong association between older age, male gender, heart failure, chronic kidney disease and obesity with hospital admission and risk of severe disease. The differences between the findings of this study and the present study

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may be due to the differences in the statistical population and further studies are needed in this field [14].

Also, in the present study, the mean length of hospital stay among patients who smoked was 6.35 days and the standard deviation was 3.57. No significant relationship was found between smoking and length of hospital stay. A similar study was not found to examine the length of hospital stay and its association with smoking. Also, 14.8 % of patients had a history of tobacco consumption (smoking: 6.6 %). In a study conducted in 2007 to determine the national pattern of smoking use in Iranian adults, daily smoking was reported by 14.8 % of the total population and 13.7 % of people aged 15 to 64 years [15]. This data is significantly different from the percentage of smoking patients among the present study population.

In the present study, almost half of patients (51.6 %) had a disease severity of A. In a similar study in February 2020, 72314 patients over the age of 18 were diagnosed with COVID-19, of which 44672 patients tested positive for the disease. Among the definitive patients in the study, 81 % had mild disease and 14 % had moderate to severe disease [16].

Finally, in the present study, 2.4 % of patients mentioned a history of narcotic drug use. There was no significant difference between the severity of clinical symptoms in the narcotic drug users and other cases. A study in Wuhan, China, examining the clinical manifestations and risk factors associated with mortality in adult patients with COVID-19, examined 191 patients. The rate of narcotic drug consumption was 9 % among the dead individuals and 4 % among the recovered cases. In this study, drug consumption rate was higher towards the present study. No significant difference was found between drug consumption and mortality [17]. In another study, out of 32849 patients admitted due to COVID-19, 8417 patients (25.6 %) had a history of smoking. The severity of the disease was significantly higher in patients with a history of smoking compared to those who had never smoked [9]. But, there was no significant relationship between smoking and drug addiction with disease severity in the current study.

CONCLUSION

In general, no relationship was found between sex and disease severity in the study. A similar study identified the male

sex as a risk factor for COVID-19 infection, more studies are needed to clarify this relationship. Also, a comparison was made between the length of hospital stay between smokers and other subjects. In this comparison, no significant difference was found. In this case, too, no relationship was found between smoking and narcotic drug use and the severity of the disease. Due to the fact that in the articles different findings were found in terms of the effect of smoking and drugs on the severity of the disease, it is recommended to investigate further.

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