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ORIGINAL ARTICLE

Age and Gender-Based Differences in Covid-19 Clinical Features and Management: A cross sectional study

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ABSTRACT

Background: The whole world is facing one of the biggest health related disaster (COVID-19) of the century.
Aim: To identify age and gender-based differences in Covid-19 clinical features and its management among patients at government hospitals, Pakistan.
Study design: Cross-sectional study.
Methodology: This study with enrolled subjects (n=206) was carried out after ethical review committee's (ERC) approval at Life Diabetes Centre, Gujrat and CMH Kharian Medical College (CKMC), over a period of 3 months, Kharian-Pakistan. Both male and female medical subjects were enrolled. **Statistical analysis**: Data was analyzed by SPSS software, version 17. Parameters like age, gender and treatment taken were presented as frequency. Chi square was applied to see the correlation with p-value <0.05 as significant.
Results: Total 206 patients were randomly selected, 89 male and 117 females. Among 206, patients (n=133) showed symptoms while rest of the patients (73) remained asymptomatic. There was no association of age and gender with COVID-19 symptoms having P-value greater than 0.05. There was a significant association between treatments given was significantly related with age having P-value (0.006*).
Conclusion: We concluded that there was no strong association between age and gender-based differences in Covid-19 clinical features; this could be due to small sample size.
Keywords: Covid-19**,** Age, Treatment and Gender.

INTRODUCTION

This virus was found in bats but got transmitted to humans by unknown means. Confirmed COVID-19 cases were 10,533,779 as reported by world health organization (WHO) till today worldwide. Situation in Pakistan is also alarming as the confirmed COVID-19 cases has surpassed 217,809 till today. Sindh is the most affected province with 86,795 cases followed by Punjab (77,740) cases in Pakistan[1].

RNA enveloped virus with size ranging from 60 nm to 140 nm in diameter[2]. It stays alive on surfaces for days in favourable conditions but are killed by disinfectants like sodium hypochlorite, hydrogen peroxide etc within minutes as reported by literature review[3]. It's transmission is either by inhalational route or touching contaminated surfaces and later touching his own body parts like nose, mouth and eyes[4].

Its incubation period varies ranging from 2 to 14 days. This disease presents with fever, cough, breathlessness and severe malaise among its victims. In majority of cases, the disease is of mild nature or totally asymptomatic. Patients may later develop pneumonia, acute respiratory distress syndrome (ARDS) and multi organ dysfunction as its complication[5]. The mortality rate due to this pandemic was turned out to be 2 to 3%[6]. Low white cell counts with raised C-reactive protein (CRP) usually aid in diagnosing COVID-19 cases. Computerized tomographic chest scan depicts chest abnormalities if present even in asymptomatic or mildly diseased patients[7].

Clinicians also identified several risk factors and susceptible populations including patients of Diabetes Mellitus, cardiovascular disease, smokers, overweight and obese individuals, immunocompromised individuals such as cancer patients, transplant recipients, patients suffering from autoimmune disorders and receiving long term immunosuppressive therapy and the elderly population in general[5].

In the early stages of the pandemic, young individuals and children seemed to remain relatively unscathed and the disease seemed to only significantly affect people generally over 30 years of age.[6] But as the subsequent second and third waves of the pandemic hit nations worldwide, and new mutant variants of the virus emerged, younger and younger populations began to be affected by the disease[7].

Since Pakistan is a developing country and affordability for the patients in this setup matters the most. Even with minimum resources, Pakistan has taken thorough steps like designed special hospitals, laboratories for testing, quarantine facilities, awareness campaign, guidelines for public and smart lock down to control its the spread of virus[8]. People were made aware of proper hand

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washing, avoidance of hand shake and use of disinfectants. With such a novel and yet quite ambiguous pathogenesis of the disease itself as well as its myriad sequelae, further, extensive and region based research regarding Covid-19 and its associations is the need of the hour.

The objective of the study was to identify age and gender-based differences in Covid-19 clinical features and its management among patients at government hospitals, Pakistan.

METHODOLOGY

This study with enrolled subjects (n=206) was carried out after ethical review committee's (ERC) approval at Life Diabetes Centre, Gujrat and CMH Kharian Medical College (CKMC), over a period of 3 months, Kharian-Pakistan. Both male and female medical subjects were enrolled. Covid-19 negative cases were excluded from study.

Statistical analysis: Data was analyzed by SPSS software, version 17. Parameters like gender, age and treatment taken were presented as frequency. Chi square was applied to see the correlation with p-value <0.05 as significant.

RESULTS

No association was present between gender and symptoms of COVID-19 as shown in table-1.

No association was present between age and symptoms of COVID-19 as shown in table-2.

Table-1: Clinical features of COVID-19 among enrolled subjects

Clinical Features	Males	Females
No Symptoms	35	38
Fever	6	7
Flu	3	3
Loss of smell / taste	4	3
Diarrhea	1	1
Oxygen drops	1	0
Shortness of breath	0	2
Didn't get virus yet	8	9
Fever & Flu	6	6
Fever, flu, loss of smell/taste & diarrhea	23	43
Other	2	5
Total	89	117

P value 0.096

Table-2: Clinical features of Covid-19 distribution according to age

Clinical Features	1 – 30 (years)	31 – 60 (years)	61 – 90 (years)
No Symptoms	49	20	4
Fever	6	6	1
Flu	3	3	0
Loss of smell / taste	6	1	0
Diarrhea	1	1	0
Oxygen drops	0	1	0
Shortness of breath	1	1	0
Didn't get virus yet	16	1	0
Fever & flu	10	2	0
Fever, flu, loss of smell/taste & diarrhea	36	25	5
Other	2	4	1
Total	130	65	11

P value 0.110

There was no association between gender & different treatments taken for COVID-19 as shown in table-3.

There was a significant relationship between age & different treatments taken for COVID-19 (Table-4).

Table-3: Treatment with Gender Cross tabulation with Correlation

Treatment taken	Males	Females
Injectable with oral medicines	8	14
No Treatment	48	51
Oral Treatment	29	47
Oxygen with injectable & oral medicines	4	5
Total	89	117

P value 0.554

Table-4: Treatment with Age Cross tabulation with Correlation

Treatment taken	1 – 30 (years)	31 – 60 (years)	61 – 90 (years)
Injectable with oral medicines	9	10	3
No Treatment	70	25	4
Oral Treatment	49	25	2
Oxygen with injectable & oral medicines	2	5	2
Total	130	65	11

P value 0.006* *****Statistically significant

DISCUSSION

This study was conducted in Life Diabetes Centre, Gujrat with collaboration of CMH Kharian Medical College to rule out weather is there any correlation between age, gender and Covid-19 clinical presentation. As novel disease covid-19 is hitting badly almost all nations of the world without limitations of the socioeconomic status, race, gender, age and boundaries. Unfortunately, due to limited resources and research, this major health issue remained unnoticed.

In this study total 206 patient participated, 89(43.2%) were male and 117(56.8%) were female, just like study conducted in chine in 2020 November[8]. Total number of patients found asymptomatic were 73, out of which 35 are male patients and 38 female patients. Major age group which remained symptoms free was less than 30. Patients who got loss of smell and taste were 7, 4 male and 3 females and 6 were from age group of less than 30 years. Out of 207 patients only one male form age group 30 to 60 had complaint of oxygen saturation drop. Total 34 male and 56 females, 36, 25,5 from age group 01- 30, 31- 60 and 60– 90 respectively showed symptoms of fever and flu, in comparison to study conducted at Bangladesh 2020 describes that the rising COVID-19 widespread as a worldwide danger and open wellbeing challenges all through the world. This report highlights the significance of numerous chance variables of illness seriousness and mortality such as ancient age, male sex, smoking, and comorbidities for the pathobiology and clinical scene of COVID-19. Mounting prove proposes that COVID-19 could be a sex particular and matured impacted infection and it influences by a wide assortment of factors fluctuating from hereditary to financial variables[9,10].

Other than behavioral and way of life components, sex-based physiological contrasts impact the have resistant reaction to contaminations. Sex chromosome connected qualities, sex hormones, and the micro-biome control perspectives of the natural and versatile resistant reactions

to disease. These contrasts not as it were influence the risk/susceptibility to disease but moreover the malady course/clinical results and response/adverse impacts to immunizations. Superior understanding of these components is fundamental to tailor treatments and antibody methodologies in a step toward sex-based personalized pharmaceutical[10].

Patients (48 male, 51 female) out of 206 did not require any treatment. 76 (29 male, 47 female) patients took only oral medicines. 22 (08 male, 14 female) patients need to be hospitalized for injectable treatment. Small number of patient 09 (4 male, 5 female) encountered serious complication of oxygen drop and needed to be on oxygen therapy. In comparison to other study conducted showed that 55% male 44.89% female were encountered with COVID-19.[11] Patients (n=70) were of age less than 30years who did not require any treatment.

CONCLUSION

We concluded that there was no strong association between age and gender-based differences in Covid-19 clinical features; this could be due to small sample size. However, significant relationship exists between treatments given and age.

Authors' Contribution: RM & MZA: Conception and design of work, SAAG & MUR: Collecting and analyzing the data, IR & AA: Drafting the manuscript, MR & SS: Collecting and analyzing the data, SNH & TL: Drafting and revising the manuscript for intellectual content.

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Limitations: Our study had limitations like financial constraints, lack of resources and small sample size.

Conflict of Interest: None to declare
Financial Disclosure: None

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