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USING OF DIFFERENT MEDICATIONS (DRUGS) IN HOSPITALIZED CORONA VIRUS DISEASES-19 PATIENTS

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SUMMARY

Background: The coronavirus pandemic is an ongoing global pandemic of coronavirus disease 2019 (COVID-19)caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease first destroyed in the Chinese city of Wuhan in early December 2019. **Materials and Methods:** Descriptive study [cross-sectional study, one way analysis, T test]. Convenience sampling 300 cases of different medications used in treatment of covid-19 patients with varying in ages, gender and residence. This study was performed inHospital of General AL-Hindiya in province of Holy Karbala. The data collection was carried out for a period from the 1st of November 2021yrs. to the 1st of March 2022 Yrs. Descriptive statistically, one way and the comparison between the averages at the level of probability of the significant differences ($P \leq 0.05$) applying the statistical program SAS version 2010 by using one way analysis, T test (Wayne *et al.*, 2010). **Results:** The results show the numbers of patients that hospitalized according to ages and domicile, there are no significance differences($P \leq 0.05$), with apresence of significant differences in rates among the numbers of infected (male and female). Also the same infected numbers showed in patients of covid-19 according to domicile (urban, rural). The most of patients are hospitalized according to ages noticed in male about(51-60 yrs.) in comparison to female and the same numbers found in age(41-50 yrs.). Where as to domicile appeared the more numbers of patients in (41-50yrs.)

who inhabit in urban compared to(61-80 yrs.) lived in rural. The results showed the percentage of patients that had the convene recovery in different ages about(84%) in comparison to the other percentage of mortality(16%). In general the numbers of patients that treated with different medications occurred in ages (41-50 yrs.) with the same rates as significant differences(P≤0.05) in ages about(51-60 yrs.) in comparison with another ages that appeared the lowest in rates of hospitalized covid -19 patients especially in((`0-20yrs.).In case of different medications among these patients this results showed the superiority in employing of drugs appeared in (Ceftriaxone vial, Dexamethasone ampule, Meropenem vial, Remdesivir vialand Paracetamol vial) when compared with the using of other different medications.The ratio of recovery and mortality according to gender in covid-19 patients used different medications in which the recover ratio reached in male more than female in comparison with the mortality at the same gender as follow ((30 (10%), 18 (6%)) with the same significance (p≤0.05).

KEYWORDS: Covid-19, medications, ages, domicile, gender.

1. INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a transmissible disease caused via severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was recognized in Wuhan, China, in December 2019**(Zimmer, 2021).** The disease has since extend worldwide, directing to an ongoing pandemic**(Islam,2021).** The symptoms of COVID‑19 are changable and may begin one to fourteen days after exposure to the virus, but often conclude cough, fever, headache fatigue, breathing difficulties, and loss of smell and taste**(Saniasiaya and Islam, 2021)**. Older people have a higher hazard of evolving terrible symptoms. Some people continue to experience a range of outcomes (long COVID) for months after health care and damage to organs has been detected**(Agyeman** *et al.,* **2020)**, with multi-year studies are proceeding to further explore the long-term effects of the disease**(CDC, 2020).**

The Transmission can also take place if drenched with contaminated fluids in the eyes, nose or mouth and seldom with contaminated surfaces. People still infectious for up to (20 days) and can expanse the virus even if they do not cultivate symptoms, several analyzing techniques have been established to check up the disease**(Centers for Disease Control and Prevention, 2020).**

The signs of COVID-19 infections are varying from mild symptoms to severe illness, headache, loss of smell (anosmia) and taste (ageusia), nasal congestion and runny nose, cough, muscle pain, sore throat, fever, diarrhea and breathing difficulties**(Grant** *et al.*, **2020)**. The respiratory route of spread of COVID-19, comprehending larger droplets and aerosols. COVID-19 is mainly transferred when people breathe in air polluted via droplets and small airborne atoms in the virus containing. Infected people blow out those atoms as they are, sneeze, breathe, cough,**(Wang** *et al.*, **2020).** the infection can occur over longer circumstances, particularly indoors**(Greenhalgh** *et al.*, **2021).** There is no specific effective medications or cure for (COVID‑19**(Siemieniuk** *et al.*, **2022).**

OBJECTIVES OF THE STUDY

2.1 General Objective

This study aim to assessthe correlation ship statistically among the numbers of covid-19 patients that hospitalized in the hospital of General Al-Hindiya in holy Karbala province and other risk factors such as gender, residence, ages and different medications.

2.3 Specific Objectives

1. To identify the relationship between the recovery and mortality ratio of patients hospitalized in in the hospital of General Al-Hindiya in holy Karbala province with using of different medications.
2. To estimations of different risk factors that effect on the levels and numbers of the recovery and mortality ratio of hospitalized covid-19 patients.

3. MATERIALS AND METHODS

3.1. Administrative arrangement

An official request was submitted by the College of Health and Medical Technologies to Karbala Health Directorate / general Al-Hindiya Hospital for approval of the study to seek permission for data collection.

3.2. The study design

Descriptive study [cross-sectional study, one way analysis, T test]. Convenience sampling 300 cases of different medications used in treatment of covid-19 patients with varying in ages, gender, domicile and residence.

3.3. The Study setting

This study was performed in Hospital of AL-Hindiya in province of Holy Karbala.

3.4. Period of the study

The data collection was carried out for a period from the 1st of November 2021yrs to the 1st of March 2022 Yrs.

3.5. Medications

Table 1: Drugs used in the hospitalized COVID-19 patients.

No.	Drug	Dosage	Origin
1	Aspirin	Tablet(100mg×2)	Iraq
2	Avas	Tablet40mg(1×1)	Iran
3	Azithromycin	Tablet 500mg(1×1)	Iraq
4	Ceftriaxone	Vial 1g(1×2)	Turkey
5	Dexamethasone	Vial 8mg(1×1)	Iraq
6	Enoxaparin	4000,6000 un(1×2)	China
7	Favipiravir	Tablet200mg(8/2)	Iraq
8	Famotidine	Tablet 40mg(1×2)	Iraq
9	Heparin	Vial 1cc(1×1)	Germany
10	Levofloxacin	Vial 500mg(1×2)	Turkey
11	Meropenem	Vial 1g(1×2)	Cyprus
12	Methylprednisolone	Tablet 8mg(1×2)	India
13	Plavix	Tablet 75mg(1×1)	Iraq
14	Paracetamol	Vial 1000mg(1×2)	Italy
15	Ranitidine	Ampule 50mg(1×2)	Iraq
16	Remdesivir	Vial 200mg(1×1)	India
17	Vancomycin	Vial 500mg(1×2)	Cyprus

3.6. Inclusion and exclusion criteria

Criteria for the selection of patients

1) Inclusion criteria: All patients who were diagnosed as a case of covid-19.
2) Exclusion criteria: Health people without covid-19.

3.7. Laboratory investigation of covid-19 patients

This part was obtained from results of laboratory examination for covid-19patients(n=300) that are recorded in patient profiles and the results of the analyze consist of (CT-scan, CRP, PCR and D-dimer) from statistics divisions of hospital of general Al- Hindiya.

3.8. Statistical data analysis

Descriptive statistically, one way and the comparison between the averages at the level of probability of the significant differences (P≤0.05), applying the statistical program SPSS version 2010 by using one ways, T test analysis **(Wayne *et al.*, 2010).**

4. RESULTS AND DISCUSSIONS

4.1. covid-19 patients with ages and domicile

In table(2) the results show the numbers of patients that hospitalized according to ages and domicile, regarding to ages about(10-80 years) in which appeared there are no significance differences(P≤0.05) with a presence ofsignificant differences in rates among the numbers of infected (male and female)(27.0±5.47, 22.8±5.88) respectively. Also the same infected numbers showed in patients of covid-19 according to domicile(urban, rural)(28.0+0.3, 22.0+96.3) respectively(figure 1).

Indeed, the ranges of covid-19 infected patients domicile in these resultswere disagreement with previous studies **(Stier, Berman and Bettencourt, 2020**) in which appeared more incidence in urban than rural, and this may be due to Places marked with inequalities and a high concentration of urban poor living in crowded housing do appear to be more vulnerable than those that are better resourced, less crowded and more equal **(Iacobucci, 2020).**

The results showed there is no significance differences(P≤0.05) in different ages in patients regardless of where they live and the most of patients are hospitalized according to ages noticed in male about(51-60 yrs.) in comparison to female and the same numbers found in age(41-50 yrs.). Where as in case of the domicile appeared the more numbers of patients in (41-50yrs.) who inhabit in urban compared to(61-80 yrs.) lived in rural. The infection rates that happened in older ages among different patients may be attributed the patients with other disease such as (heart failure, diabetes, renal failure, and suppressed immunity drugs) and had significant differences with another statistically data **(Marques de *et al.*, 2020)** where found the highest rates of covid-19 among children and adolescents demonstratedthat many factors can contribute to the disparity in disease outcomes, such as hormone-specific reaction and activity of X-linked genes, which modulate the innate and adaptive immune response to virus infection.

4.2. Different medications in COVID-19 patients according to ages with percentage of recovery and mortality rates

The results showed in table(3) the percentage of patients that had the convene recovery in different ages about(84%) in comparison to the other percentage of mortality(16%). In general the numbers of patients that treated with different medications occurred in ages (41-50 yrs.) with the same rates as significant differences(P≤0.05) in ages about(51-60 yrs.)(204(12.0±0.38)(204(12.0±0.75) respectively in comparison with another ages that appeared the lowest in rates of hospitalized covid -19 patients especially in((10-20yrs.) (36(2.12±0.06)(figure(2).

About using of different medications among the patients, this results showed the superiority in employing of drugs appeared in (Ceftriaxone, Dexamethasone, Meropenem, Remdesivir and Paracetamol) in rates as following ((183(30.5±2, 141(23.5±19.17), 123(5.5. ±18.09), 87(14.5±12., 63(1±9.18)) when compared with rates in using of other different medications(figure3). This result is agreement with the previous studies and data of **Huang** *et al.*,**(2020)** that found The primary complications during hospitalization included ARDS(Acute Respiratory Distress), arrhythmia and shock. Patchy shadows of the bilateral lungs and ground-glass shadow were typical CT signs of COVID-19. The most severe patients were older and had more basic diseases compared to mild patients. Also this study is agreement with the data of **De Keyser** *et al.*, **(2020)** in which showed the highest using of controlled medications in hospitalized patients that suffered from Asthma and (COPD)Chronic Obstructive Pulmonary Disease.

4.3. The percentage of recovery and mortality in covid-19 patients according to gender(male, female)

The results in table(4) showed the ratio of recovery in male and female about(252(84%)), in comparison with mortality rate in which reached according((48(16%)), at the same time the recovery and mortality ratio regarding with gender in covid-19 patients that were using different medications with rates in male more than female as follow (27.1±5.47, 22,8±5.88)in which the recoveryand mortalityratio in male more than female about[(133(44.3%, (119(39.7%));(30 (10%), 18 (6%)](figure 3). So, these result had have agreement with the study data of**(Vahidy** *et al.*, **2021)**that noticedLikewise gender differences in the presence of contributing comorbidities may also influence Covid-19 disease severity and treatment outcomes. Also **Filardo** *et al.*, **(2019)** cleared up the differences in patient sex ratios across

physiological categories may provide insight into Covid-19 disease mechanisms. Yet, it is important to note that these data fail to fully capture the sociocultural influences on Covid-19 testing, case identification and access to care which may differ based on gender, race, socioeconomic status and geographic location as case reports typically originate from a hospital-based setting.

Table 2: The numbers and rates of COVID-19 patients hospitalized according to ages with gender and domicile.

AGE(Yrs.)	GENDER		DOMICILE		TOTAL
	F	M	Urban	rural	
(10-20)	3	6	9	0	9
(21-30)	14	19	12	21	33
(31-40)	20	29	36	15	51
(41-50)	45	29	48	24	72
(51-60)	24	45	36	33	69
(61-80)	31	35	27	39	66
TOTAL	137	163	168	132	300
	300		300		
	22.8±5.88	27.1±5.47	28.0±0.3	22.0±96.3	22.0±85.3
P≤0.05	0.09		0.16		

*significant differences (P ≤ 0.05), n=300

*Mean ± SE m=male

F=female

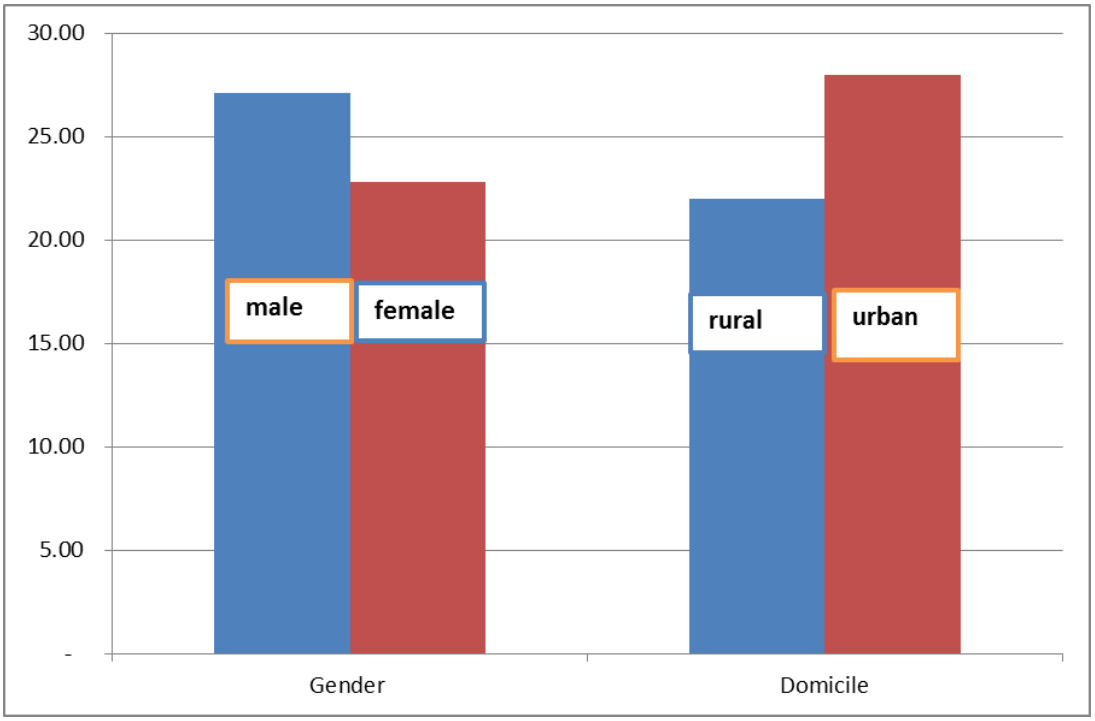

Figure 1: The rates of hospitalized covid -19 patients according to gender and domicile.

Table (3): The numbers and rates of different medications in covid -19 patients withpercentage of recovery and mortality ratesaccording to ages.

PROGNOSIS		AGES (years)		MEDICATIONS																TOTAL	P≤O.05
mortality	recovery		RESIDENCE(days)	Aspirin	Avas	Azithromycin	Ceftriaxone	Dexamethasone	Enoxaparin	Favipiravir	Famotidine	Heparin	Levofloxacin	Meropenem	Methylprednisolone	Plavix	Paracetamol	Ranitidine	Remdesivir	Vancomycin	
0	9	10-20	(5-7)	0	0	3	21	3	0	3	0	0	0	0	0	0	3	0	0	3	36(2.12±0.06) E	0.5
0	33	21-30	(1-11)	0	0	9	18	18	12	9	6	6	0	18	3	0	15	3	6	0	123(7.24±0.45)D	0.04
3	48	31-40	(2-7)	0	0	12	24	21	24	6	12	9	6	24	3	0	21	3	9	3	177(10.41±0.46) C	0.05
9	63	41-50	(2-5)	0	0	12	30	30	24	6	15	3	12	30	0	0	9	6	21	6	204(12.0±0.38)A	0.03
9	60	51-60	(3-13)	6	6	3	51	36	9	0	21	6	9	21	9	3	6	0	18	0	204(12.0±0.75)A	0.01
27	39	61-80	(3-15)	12	9	3	39	33	3	0	9	3	6	30	6	3	9	0	33	0	198(11.65±0.73) B	0.03
48 (16%)	252 (84 %)			18 (3±2.39)	15(2.5 1.88)±	42(7 ±6.60)	183(30.5±22.28)	141(23.5±19.17)	72(12 ±11.13)	24(4 ±4.42)	63(10.5±8.18)	27(4.5±3.71)	33(5.5±4.44)	123 (5.5. ±18.09)	21(20.5± 2.48)	6(3.5± 0.70)	63(1± 9.18)	12 (2±2.43)	87 (14.5± 12.64)	12 (2±1.87)	942 (157±76.60)	

*significant differences ($P \leq 0.05$), n=300

*Mean ± SE

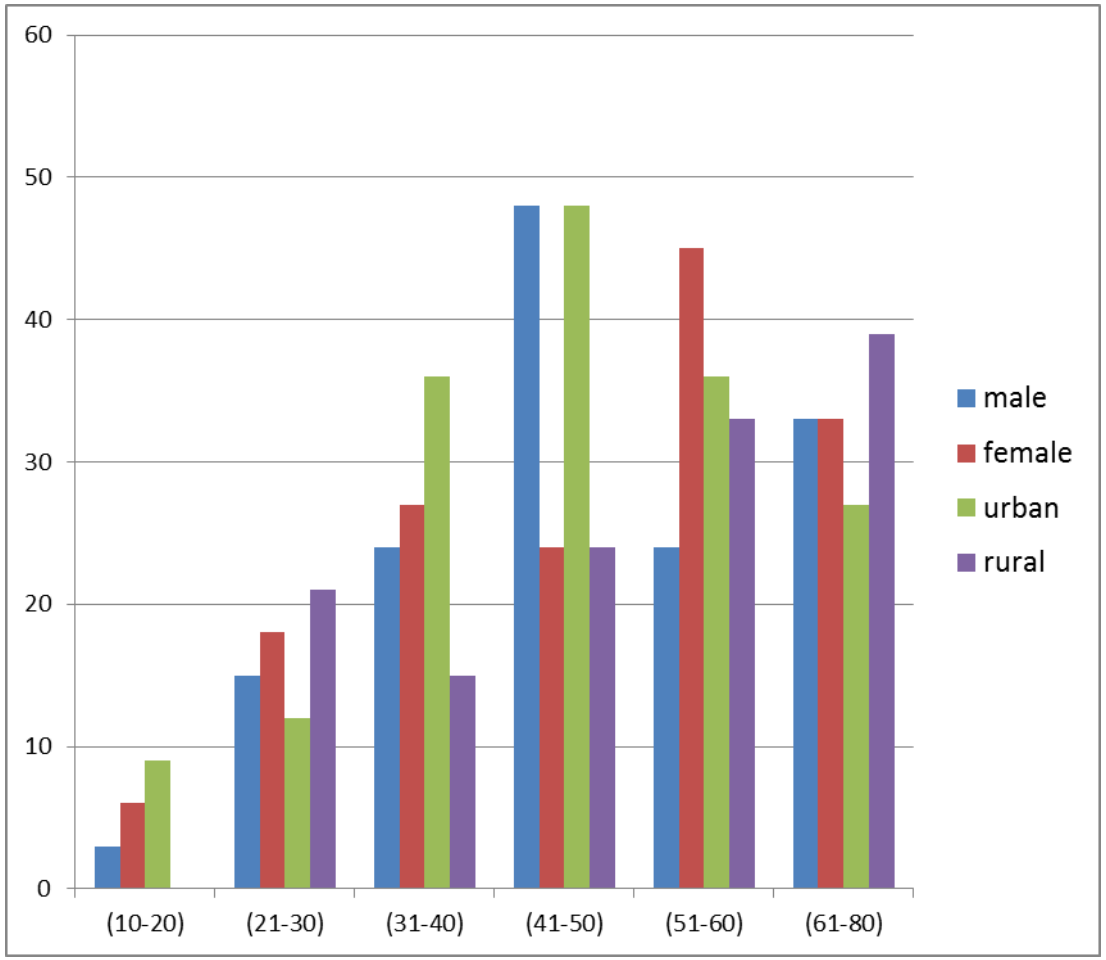

Figure 2: The numbers of hospitalize covid -19 patients according to ages and domicile.

Table 4: The numbers of medications used in covid-19 patients withpercentage of recovery and mortality rates according to gender.

GENDER		MEDICATIONS																	
		Aspirin	**Avas**	**Azithromycin**	**Ceftriaxone**	**Dexamethasone**	**Enoxaparin**	**Favipiravir**	**Famotidine**	**Heparin**	**Levofloxacin**	**Meropenem**	**Methylprednisolone**	**Plavix**	**Paracetamol**	**Remdesivir**	**Vancomycin**	**Ranitidine**	**Recovery%**	Mortality%
m	163(27.1±5.47)	6	5	8	23	22	26	3	7	4	6	15	3	2	13	17	2	1	133(81.6%) (44.3%)	30(18.4%) (10%)
f	137(22.8±5.88)	0	0	4	21	20	28	4	9	4	4	15	2	0	12	10	2	2	119(86.9%) (39.7%)	18(13.1%) (6%)
Total	300	6	5	12	44	42	54	7	16	8	10	30	5	2	25	27	4	3	252(84%)	48(16%)
LSD	3.301																			

*significant differences ($P \leq 0.05$), n=300

*Mean ± SE

*LSD(low significant differences)

m=male

F=female

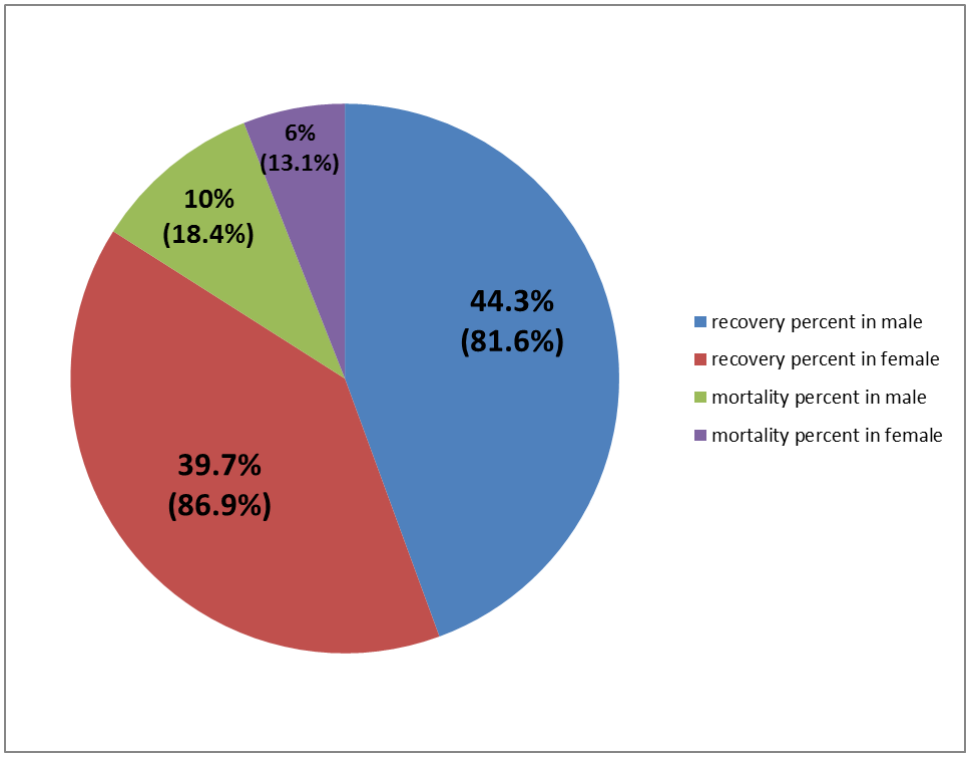

Figure 3: Percentage of recovery and mortality rates(future state for COVID -19 patients have been taken several medications).

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

1. There are no significance differences($P \leq 0.05$) between gender and domicile, and presence of significant differences in rates among the numbers of infected (male and female).
2. Regarding to the domicile appeared the more numbers of patients in (41-50yrs.) who inhabit in urban compared to(61-80 yrs.) lived in rural.
3. Finding of mortality and recovery between male and female covid-19 patients,where it was found that the ratio of recovery and mortality in male is higher than in female.
4. Regarding to the using of different medications among the patients found thevarying in taking of several medications in different ages, gender and domicile with the diverse in percentage of recovery and mortality rates.

6.2. Recommendations

1. Commitment to good sterilization with various prevention methods from wearing masks, social distancing and using sterilization solutions.
2. Use the appropriate medications and adhere to the instructions issued by the attending physician.

3. Sterilization and disinfection of all public places, hospitals and schools, also reducing overpopulation in public places.
4. Eat healthy and clean food and nutritional supplements from fruits that contain vitamins and antioxidants.

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