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Research Article

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The Clinical Supervision of COVID-19 Infection: The Italian Experience of Home Care Unit in Lombardy Region

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Abstract

From March to June 2020 the Home Care Unit of Paxme Group evaluated and monitored 245 subjects COVID-19 positive or clinical suspected living in Lombardy Region. There were 101 males, 144 females, with mean age 59.1 years. The females had lower mean age than males (57.4 vs 61.9). In 67 cases (27%) the subjects were discharged from hospitals, the other 178 cases (73%) stay at home with no clinical history of hospitalization. The COVID-19 positive group had 35 males (52%) and 32 females (48%), in the clinical suspected 67 males (38%) and 111 females (62%). There were 2 deaths (1%) and 11 hospitalizations (5%). The 11 hospitalized subjects had a higher mean age (72 years), a higher presence of clinical suspected (72%) and a higher presence of females (72%). The 2 deaths were only in clinical suspected with mean age 87 ys. Older subjects (>65 years) had a higher presence of hospitalization and death. Our study suggests that the age and gender are important in the clinical evolution of COVID-19 infection. The Home Care supervision was an adequate answer to the public health needs, but for the future home healthcare should increase.

Keywords: Home Care, COVID-19 Infection, Symptoms, Age, Gender

Introduction

Italy it has been particularly affected by the COVID-19 pandemic from February 2020; from the beginning of the outbreak the epidemiologic data got worse [1, 2].

On March 2020 Italian government adopted adequate strategies to contain the pandemic: from March 8 started the lockdown [3]. The number of cases raised exponentially, but the distribution was not homogeneous. Lombardy region, a norther region, had a number of infected subjects and deaths higher than in southern regions [1]. First of all, was necessary to conform the regional health system to the changing needs, so the hospital capacity was increased especially intensive care [4]. Considering that COVID-19 infection may remain asymptomatic or with several symptoms in absence of clinical complications, it was important to create a supervision of early infection at home [5-8].

On March 23 2020, Lombardy Region passed the Council Deliberation n. XI/2986, establishing measures about territorial area. In this measures were included a service of competence of home care unit named "ADI COVID". The ADI COVID was a 14 days' supervision including: home nurse's and doctor's evaluations, blood drawn, oropharyngeal swab, phone monitoring of symptoms. The ADI COVID was dedicated to subjects COVID-19 positive or clinical suspected, in discharged from hospitals or at home with no clinical history of hospitalization. The Home Care Unit of Paxme Group, characterized by a long experience in home-based primary care and palliative home care, joined the ADI COVID services. The aim of the study was to observe the clinical evolution of COVID-19 infection.

Material and Methods

From March to June 2020 the Home Care Unit of Paxme Group evaluated and monitored 245 subjects COVID-19 positive or clinical suspected living in Lombardy Region. We registered personal and clinical data of each subject. The data were statistically analysed using t-test and chi-squared test.

Results

The population was composed of 245 subjects living in three different areas: 177 subjects in the area of ATS Milano, 58 in the area of ATS Brianza and 10 in ATS Insubria. The personal data were: 101 males, 144 females, mean age 59.1 years (ys). The females had lower mean age than males (57.4 vs 61.9). About the medical history: in 67 cases (27%) the subjects were discharged from hospitals, the other 178 cases (73%) stay at home with no clinical history of hospitalization.

The mean days of care was 11, with a minimum of 1 day and maximum of 30 days. The analysis of clinical data detected: mean oxygen saturation 97% at the first detection, 96% at the discharge, mean temperature 36°C at the first detection, 36°C at the discharge.

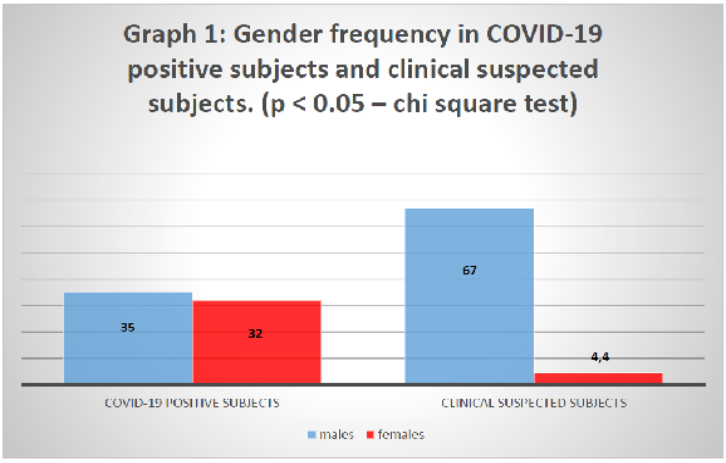
The symptoms at the start of the monitoring are the following: 57 (21%) with no symptoms, 56 (23%) with cough, 46 (19%) with dyspnea, 42 (17%) with weakness, 6 (3%) with taste disorders, 18 (7%) with gastro-enteric problems, 3 (1%) with pain and 22 (9%) with fever. At the discharge: 226 (96,5%) with no symptoms, 2 with cough, 1 with dyspnea, 2 with weakness, 2 with fever, no one with taste disorders, gastro-enteric problems, or pain (Table 1).

Table 1: Frequency of symptoms at the start of the monitoring and discharge. (p > 0.05 – chi square test)

	absence of symproms	cough	cough dyspnea	weakness	taste disorders	gastro-enteric disorders	pain	fever
start of the monitoring	52 (21%)	56 (23%)	46 (19%)	42 (17%)	6 (3%)	18 (7%)	3 (1%)	22 (9%)
discharge	226 (96,5%)	2 (1%)	1 (0,5%)	2 (1%)	0	0	0	2 (1%)

We executed 199 oropharyngeal swab: 184 (92%) resulted negative, 15 (8%) positive. The oropharyngeal swab resulted positive were detected in 8 Covid-19 positive and 7 clinical suspected: 12 cases became negative at the second and third swab, 2 subjects need hospitalization.

In the population, during the supervision, there were 2 deaths (1%) and 11 hospitalizations (5%). The other 232 (94%) subjects were discharged. If we observed the population divided in subjects Covid-19 positive and subjects clinical suspected, the Covid-19 positive were 67 (27%), 178 (73%) the clinical suspected. In the COVID-19 positive there were 35 males (52%) and 32 females (48%), in the clinical suspected 67 males (38%) and 111 females (62%); this distribution was statistically significant ($p<0.05$ – chi square test) (Graph 1). The mean age was: 62.6 ys in Covid-19 positive, 58 ys in clinical suspected.



Another difference, with no statistically significance, between the two groups was detected in the medical history: in the Covid-19 positive 50 subjects were discharged from hospital (75%) and 17 had no clinical history of hospitalization (25%), in the clinical suspected 17 subjects were discharged from hospital (10%) and 161 had no clinical history of hospitalization (90%). The distribution of symptoms in the two group is no statistically significant (Table 2).

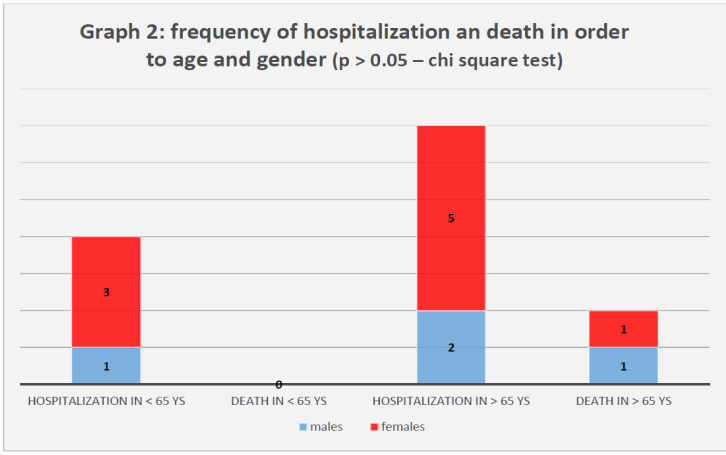
Table 2: Frequency of symptoms at the start of the monitoring and discharge: distribution in COVID-19 positive subjects and clinical suspected subjects. (p > 0.05 – chi square test)

		absence of symproms	cough	dyspnea	weakness	taste disorders	gastro-enteric disorders	pain	fever
COVID-19 positive subjects	start of the monitoring	26 (40%)	11 (17%)	10 (15%)	11 (17%)	1 (1%)	1 (1%)	1 (1%)	2 (3%)
	discharge	61 (96%)	0	1 (2%)	1 (2%)	0	0	0	0
clinical suspected subjects	start of the monitoring	26 (15%)	45 (25%)	36 (20%)	31 (18%)	4 (2%)	14 (8%)	2 (1%)	20 (11%)
	discharge	164 (96,5%)	2 (1%)	0	1 (0,5%)	0	0	0	2 (1%)

During the supervision there was hospitalization's need in 3 Covid-19 positive and 8 clinical suspected.

The analysis of the 11 hospitalized subjects detected: a higher mean age if related to population (72 vs 59.1 ys), a higher presence of clinical suspected vs Covid-19 positive (8 vs 3; 72% vs 38%) and a higher presence of females (8 vs 3;72% vs 38%). There were 2 deaths in clinical suspected with mean age 87 years, no hospitalization in medical history. No deaths in COVID-19 positive.

If we divided the population in order to the age, we had 154 subjects < 65 ys and 91 subjects > 65 ys. There was a difference in the hospitalization and death, with a higher presence in older subjects (Graph 2) (p > 0.05 - chi square test).



Discussion

Our data show that the COVID-infection can be asymptomatic or paucisymptomatic in a population with a low mean age (59.1 years) [5]. The most frequent symptoms were cough, dyspnea and weakness, but the 21% of subjects had no symptoms. Our population had a higher frequency of clinical suspected subjects than COVID-19 positive subjects (73% vs 27%): the females were significant higher in suspected than in positive (62% vs 48%).

A history of hospital discharge has a higher frequency in COVID-19 positive than in clinical suspected (75% vs 10%). So the clinical suspected are younger, not previously hospitalized and with a higher frequency of females; the clinical suspected had most hospitalization need (8 vs 3; 72% vs 38%) and 2 deaths at home.

We demonstrate that the age is important in the clinical evolution (3): there was a higher mean age in subjects who need hospitalization (72 ys) and in deaths (87ys). Subjects who need hospitalization had an age > 65ys in 64% of cases, the deaths had an age > 65ys in 100% [5]. Also the gender had a role in the clinical evolution: subjects who need hospitalization were females in 72% of cases.

Conclusions

The COVID-19 pandemic stressed the Italian Healthcare System and it was mandatory to find new strategies in public health. The ADI COVID in Lombardy was an adequate answer to the public health needs, focused on subjects in home quarantine. A supervision at home of early COVID-19 infection permits to observe the subjects: age and gender has a role in clinical evolution. The lack of a coordination in the different areas of Lombardy region didn't permit to have an adequate answer everywhere. This experience suggests that home healthcare should be increased for next months: there's need of long care investments.

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