



Characteristics of COVID-19 patients dying in Italy Report based on available data on March 30th, 2020

1. Sample

The present report describes characteristics of 10,026 COVID-19 patients dying in Italy.* Geographic distribution across the 19 regions and 2 autonomous provinces of Trento and Bozen is presented in the table below. Data are update to March 30th, 2020.

Table 1. Geographic distribution of deceased patients COVID-2019 positive

REGIONS	N	%
Lombardia	6,366	63.5
Emilia-Romagna	1,432	14.3
Piemonte	574	5.7
Veneto	431	4.3
Liguria	271	2.7
Trento	129	1.3
Marche	127	1.3
Lazio	124	1.2
Toscana	116	1.2
Puglia	92	0.9
Friuli-Venezia Giulia	89	0.9
Campania	60	0.6
Bolzano	58	0.6
Sicilia	32	0.3
Valle d'Aosta	26	0.3
Umbria	25	0.2
Abruzzo	23	0.2
Sardegna	20	0.2
Calabria	18	0.2
Molise	9	0.1
Basilicata	4	0.0
Total	10,026	100.0

* COVID-19 related deaths presented in this report are those occurring in patients who test positive for SARSCoV-2 RT by PCR, independently from pre-existing diseases.

2. Demographics

Mean age of patients dying for COVID-2019 infection was 78 (median 79, range 26-100, IQR 73 -85). Women were 3,088 (30.8%). *Figure 1* shows that median age of patients dying for COVID-2019 infection was more than 15 years higher as compared with the national sample diagnosed with COVID-2019 infection (median age 62 years). *Figure 2* shows the absolute number of deaths by age group. Women dying for COVID-2019 infection had an older age than men (median age women 82 - median age men 78).

Figure 1. Median age of patients with COVID-2019 infection and COVID-19 positive deceased patients

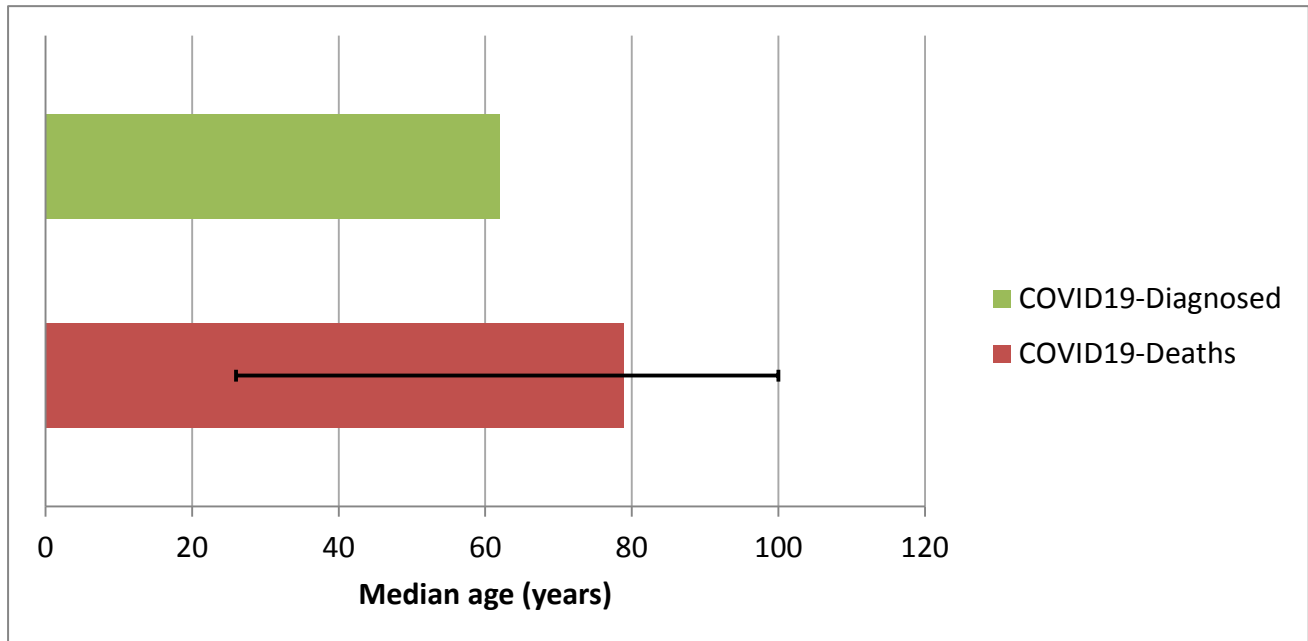
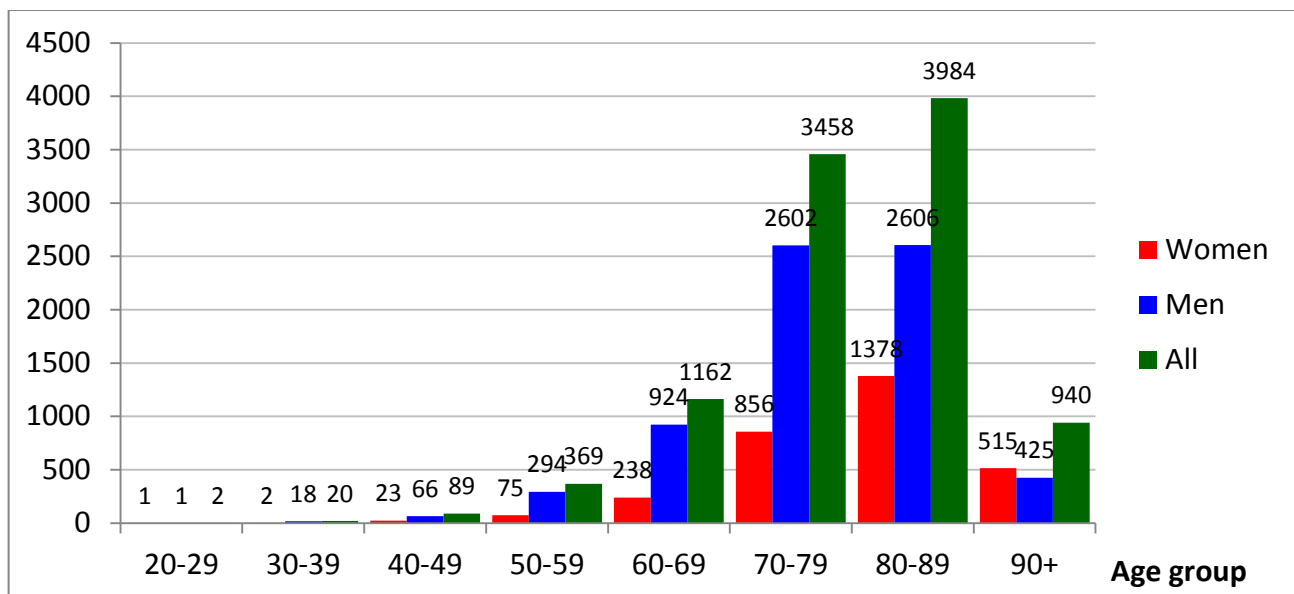


Figure 2. Absolute number of deaths by age group



Note: For 2 deceased persons age was not possible to be evaluated

3. Pre-existing conditions

Table 1 presents most common comorbidities diagnosed before COVID-2019 infection. Data on diseases were based on chart review and was available on 909 patients dying in-hospital for whom it was possible to analyse clinic charts. Mean number of diseases was 2.7 (median 3, SD 1.6). Overall, 2.1% of the sample presented with a no comorbidities, 21.6% with a single comorbidity, 24.5% with 2, and 51.7% with 3 or more.

Before hospitalization, 28% of COVID-19 positive deceased patients followed ACE-inhibitor therapy and 16% angiotensin receptor blockers-ARBs therapy. This information can be underestimated because data on drug treatment before admission were not always described in the chart.

Table 1. Most common comorbidities observed in COVID-19 positive deceased patients

Diseases	N	%
<i>Ischemic heart disease</i>	249	27.4
<i>Atrial Fibrillation</i>	209	23.0
<i>Heart failure</i>	149	16.4
<i>Stroke</i>	109	12.0
<i>Hypertension</i>	668	73.5
<i>Diabetes</i>	286	31.5
<i>Dementia</i>	146	16.1
<i>COPD</i>	166	18.3
<i>Active cancer in the past 5 years</i>	150	16.5
<i>Chronic liver disease</i>	42	4.6
<i>Chronic renal failure</i>	216	23.8
Number of comorbidities		
<i>0 comorbidities</i>	19	2.1
<i>1 comorbidity</i>	197	21.6
<i>2 comorbidities</i>	223	24.5
<i>3 comorbidities and over</i>	470	51.7

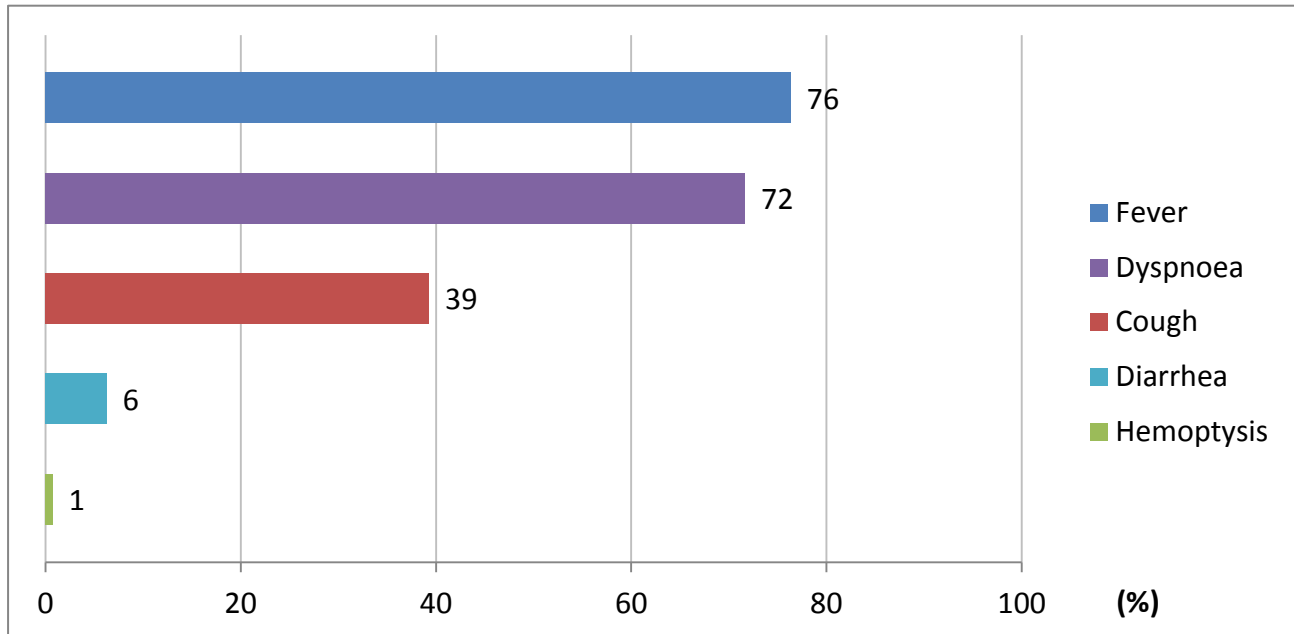
4. Diagnosis of hospitalization

In 94.9% of hospitalizations, conditions (e.g. pneumonia, respiratory failure) or symptoms (e.g. fever, dyspnoea, cough) compatible with COVID-19 were mentioned. In 46 cases (5.1% of cases) the diagnosis of hospitalization was not related to the infection. In 7 cases the diagnosis of hospitalization concerned exclusively neoplastic pathologies, in 18 cases cardiovascular pathologies (for example IMA, heart failure, stroke), in 11 cases gastrointestinal pathologies (for example cholecystitis, perforation of the intestine, intestinal obstruction, cirrhosis), in 10 cases other pathologies.

5. Symptoms

Figure 3 shows symptoms most commonly observed at hospital admission. Fever, dyspnoea and cough were the most commonly observed symptoms, while diarrhoea and haemoptysis were less commonly observed. Overall, 6.0% of patients did not present any symptoms at hospital admission.

Figure 3. Most common symptoms observed in COVID-19 positive deceased patients



6. Acute conditions

Acute Respiratory Distress syndrome was observed in the majority of patients (96.5% of cases), followed by acute renal failure (25.7%). Acute cardiac injury was observed in 11.6% and Superinfection in 11.2% of cases.

7. Treatments

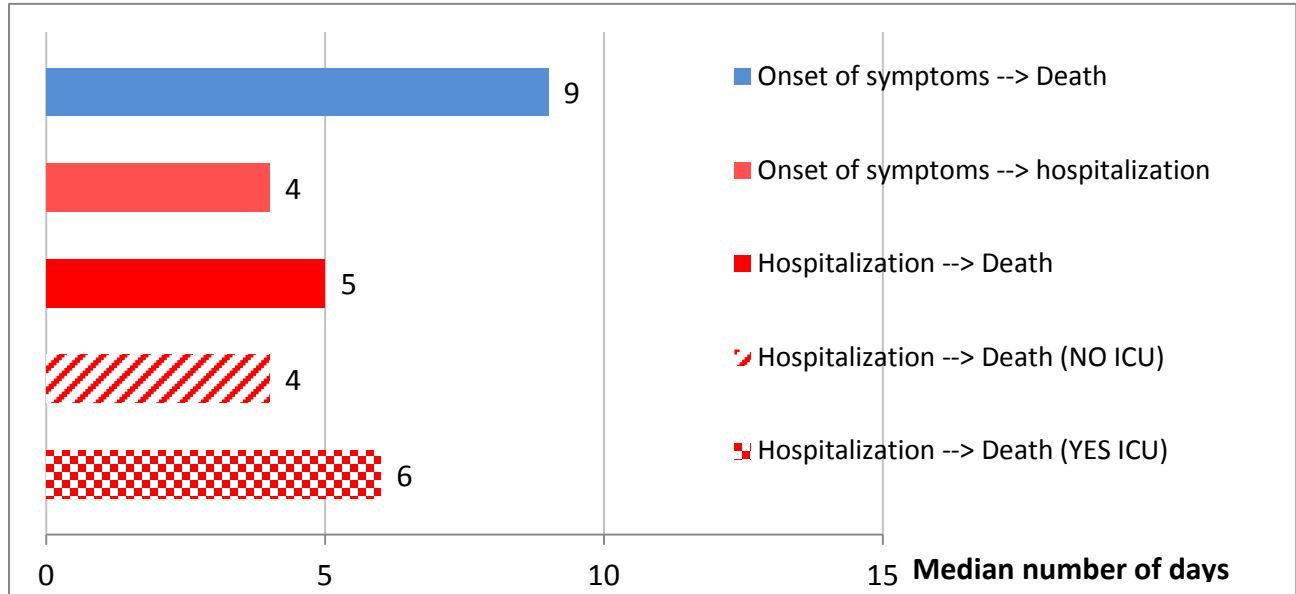
Antibiotics were used by 86% of patients during hospital stay, while less used were antivirals (54%) and corticosteroids (34%). Concomitant use of these 3 treatments was observed in 19.3% of cases.

Out of COVID-19 positive deceased patients, 1.7% were treated with Tocilizumab during hospitalization.

8. Time-line

Figure 4 shows, for COVID-19 positive deceased patients, the median times, in days, from the onset of symptoms to death (9 days), from the onset of symptoms to hospitalization (4 days) and from hospitalization to death (5 days). The time from hospitalization to death was 2 days longer in those who were transferred to intensive care than those who were not transferred (6 days vs. 4 days).

Figure 4. Median hospitalization times (in days) in COVID-19 positive deceased patients



9. Deaths under the age of 50 years

As of March 30th, 112 out of the 10,026 (1.1%) positive COVID-19 patients under the age of 50 died. In particular, 23 of these were less than 40 years, 19 men and 4 women (age range between 26 and 39 years). For 2 patients under the age of 40 years no clinical information is available; the remaining 15 had serious pre-existing pathologies (cardiovascular, renal, psychiatric pathologies, diabetes, obesity) and 6 had no major pathologies.

This report was produced by COVID-19 Surveillance Group

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