Aging Clinical and Experimental Research (2020) 32:1883–1888
https://doi.org/10.1007/s40520-020-01641-w

POSITION PAPER

Improving the care of older patients during the COVID-19 pandemic

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Received: 28 May 2020 / Accepted: 22 June 2020 / Published online: 11 July 2020

Abstract
The SARS-CoV-2 pandemic has led to a dramatic crisis of Health Care Systems worldwide, and older people have been among the most disadvantaged. Specific recommendations and reports have been released both at International and National level, regarding the diagnosis and management of COVID-19 in the elderly. However, little has been proposed for an appropriate response to older, frail and multimorbid patients in different settings of care (acute care units, long term care facilities, nursing homes and primary care) and for the management of geriatric syndromes (i.e. delirium, sarcopenia, falls). We presume that the current pandemic of will leads to substantial changes in health care systems, and we suggest some key guide principles that could inspire the provision of healthcare services to older people and their families. These principles are primarily directed to physicians and nurses working in the geriatric field but could also be useful for other specialists.

Keywords SARS-CoV-2 · COVID-19 · Elderly · Frailty

Introduction

Up to day, Italy is the third country for confirmed cases of Corona Virus DIsease 19 (COVID-19) after the United States and Spain and the leading country in terms of deaths related to the virus. By May 14th reported cases and deaths reached 222,140 and 31,106, respectively [1]. The Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2) pandemic led to a dramatic crisis of the Italian Health Care System, either in primary, long term, and acute hospital care. The National Government and the different Regional Health Systems tried to mitigate the spreading of the outbreak by prompting various initiatives, sometimes driven by dissimilar perspectives on healthcare policies and by the different availability of local resources. The current pandemic revealed that a patient-centred care model is inadequate and needs to be replaced by a community-centred care model where responses to crisis do not just burden on healthcare systems but affect society as a whole [2].

Much effort has been devoted to face the acute phase of the disease and its complications. In the Lombardy Region, about 50% of hospital beds have been repurposed to treat patients with COVID-19 related pneumonia, mainly in acute medical units, and Intensive Care Unit (ICU) capacity significantly increased in one month, almost doubling the number of ICU beds for critically ill patients which were active in the pre-COVID-19 era [3, 4].

The highest lethality of COVID 19 has been reported among older people. However, it is unclear which role is played by the conditions afflicting older people, such as frailty, multimorbidity, disability, dementia in determining this outcome [5–7].

All the authors contribute to drafting the manuscript.

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Specific recommendations have been released both at the International and National level, regarding the diagnosis and the management of SARS-CoV-2 disease in the elderly [8–10]. However, little has been proposed for the appropriate care for older, frail and multimorbid patients in different settings of care (acute care units, long term care, nursing home, and primary care) and for the management of geriatric syndromes (i.e., delirium, sarcopenia, falls) [11].

The COVID19 pandemic scenario

The current scenario of COVID19 pandemic and its effects on social, clinical and health care organization levels are presented and discussed in the following points especially in relation to the Italian experience. We are nonetheless confident that most indications could be important for other countries.

- Most people affected by severe COVID-19 are old and are at high risk of developing acute complications. A recent institutional report showed that the median age of patients dying of COVID-19 is 80 [IQR 73–85], which is more than 15 years higher than the median age of patients diagnosed with COVID-19 in Italy [12]. Current data suggest that people of age 70 and older represented about 85% of deaths in Italy [13]. Data collected in hospitals show a clear correlation between age and mortality rates, which reaches 55% among very old patients (> 85 years). Moreover, 92% of hospital deaths occur among people aged 65 and over. Table 1 shows mortality rates by different age groups in COVID-19 patients admitted to Covid Towers—acute medical units specifically devoted to patients with respiratory failure due to COVID-19 related pneumonia—of the Sant'Anna Hospital, Fondazione Poliambulanza-Istituto Ospedaliero, and Geriatric Medicine, University of Brescia, Italy from February, 22 to April, 7, compared with the mortality in the same hospitals' wards within the previous year.
- A large number of reports on the clinical characteristics of patients affected by COVID-19 have highlighted the relevance of cardiovascular and metabolic comorbidities in explaining the excess of mortality among older people. However, to our knowledge, there are no studies assessing the impact of frailty, disability dementia or other geriatric syndromes, on patients' outcomes. Recent data suggest that the mortality rate in hospitalized subjects with severe dementia (i.e., with a Clinical Dementia Rating Scale ≥ 3) reached 65% in patients with an average age of 80 years [14].
- It is now widely accepted that one of the common presenting symptoms of older people affected by COVID-19 is delirium [15]. In frail patients, delirium is commonly hypoactive or mixed. Without an active screening hypoactive delirium can go undetected [16]. Delirium is a strong predictor of mortality and its incidence in elderly patients hospitalized because of COVID-19 is urgently needed. We suggest to adopt screening protocols, such as 4AT, for the early diagnosis of delirium and to monitor psychological, behavioural, and physical functions and to implement non-pharmacological and pharmacological treatments for delirium patients [17].
- No guidelines are available to improve the clinical approach to elderly people affected by COVID-19 along with disability and dementia.
- The risk of ageism is tremendously high. Likewise, the risk of not offering comfort care to patients with poor prognosis is just as high.
- One of the major pitfalls of the current healthcare system that has been revealed by the pandemic is the risk of ageism. In the current COVID-19 tragedy, ageism can be summarized as the exclusion of persons from interventions just because they were "old". Geriatric medicine has produced substantial evidence showing that chronological age needs to be placed side by side by concepts like frailty and disability which better define the health status and future prognosis of older persons [18]. Unfortunately, the emergency has brought everyone back to the disease-era forgetting the patient-era, forgetting the importance of the biology of ageing, leading to dramatic medical care decisions mostly based on chronological age [19].
- The impact of COVID-19 has been devastating on long term care (LTC) facilities, with both high prevalence and mortality among residents [20]. Data about nursing homes recently collected by the Italian N.I.H. through a survey in the Lombardy Region demonstrated a mortality rate fourfold higher than expected in LTC, even

Table 1 Mortality rates in hospital patients admitted for COVID-19 in the medium acute care unit

Age	Number of admitted patients	Mortality, number (percentage)	Mortality in the non COVID-19 era (percentage) (%)
< 55	273	12 (4%)	1
55–64	296	29 (10%)	3
65–74	506	119 (24%)	4
75–84	517	222 (43%)	5
85 and more	188	104 (55%)	9
Global	1780	486 (27%)	4

The table shows the number of patients admitted to our Covid Towers by different age groups, number, frequency of deaths; and frequency of deaths observed in the previous years

A chi-square test of independence was performed to examine the relation between age and the mortality; $p < 0.00001$

if in only half of the cases a relation with COVID-19 can be demonstrated [21]. These data can be explained by the initial scarcity of diagnostic tests performed in these facilities, mainly for economic and structural reasons. This led to a delay in the isolation procedures for infected residents. Other factors that could explain the spread of the disease in LTC settings are the initial scarcity of personal protective equipment (PPE) and the lack of early and clear emergency management procedures (the first operational indications were released one month after the outbreak began).

- There are still insufficient data about the lethality of COVID-19 in community-dwelling older people. Often, older subjects who died at home have not been tested either before or after death. Indeed, some Regions in Italy did not adopt policies of early contact tracing, limiting the use of diagnostic testing. This is probably one of the reasons for the rapid spread of COVID-19 in Lombardy compared to other Italian Regions [22]. Furthermore, COVID-19 has shown to often spread in specific "social" and "family" clusters. This has determined the loss of entire groups of older people, with a psychological and social impact very difficult to quantify. Italy is a decentralized country, and the organization of home care and the role of General Practitioners (GPs) are quite different among different Regions. In some areas, GPs could not carry out or prescribe diagnostic swabs for the identification of SARS-CoV-2. Some GPs lacked an adequate training, a sufficient supply of PPE and a clear coordination with health departments and institutions [23].
- The lockdown established by the Italian Government as well as the spread of COVID-19 among healthcare workers led to a reduction, and in some cases to the suppression, of home care services usually provided to frail older people (day-care, home care assistance, Alzheimer services). Additionally, the isolation from their relatives may have had, though it was not fully examined, consequences on the psychological, cognitive, behavioural and physical status of older and frail people.

The key principles for the care of older people in the COVID-19 pandemic

Hypothesizing that the pandemic of COVID-19 will lead to substantial changes in the health and social systems, we suggest some key guide principles that could inspire the provision of care services to older people and their families. These principles are especially directed to physicians and nurses working in geriatric fields but should also be considered by other specialties (Table 2).

Older person living at home

Proactive assessment and remote care systems of older people living at home can improve the diagnosis of COVID-19 and can help allocate resources for care and medications. For instance, symptoms typically related to COVID-19 as well as nonspecific symptoms and signs which may lead to suspect a new infection in an old individual—i.e., delirium, behavioural disturbances, falls and changes in functional status could be daily monitored by General Practitioners and family Nurses.

The presence of caregivers and their need for further support, particularly if they are caring for demented and disabled patients, should be periodically evaluated. This might also help to identify burnout in formal and informal caregivers. Caregivers' burnout is a known risk factor for negative outcomes and may worsen the well-being of the patient [24]. Older people living at home in self-isolation, in particular those affected by chronic conditions, need surveillance to ensure adherence to pharmacological treatments, and access to nutritious food, social and mental health support and information to maintain their emotional well-being [25].

Specific questionnaires administered by phone were recently developed to identify and monitor symptoms, to evaluate living conditions, and to assess the impact of the social distancing rules [26]. Social isolation and loneliness have long term negative health outcomes in the elderly. The current pandemic and the resulting social distancing rules have exacerbated these challenges in older adults by worsening social isolation and loneliness among those who live alone or are frail, even affecting the well-being of older adults with previously active and healthy social lives. The identification of the elderly at risk and the implementation of specific strategies could reduce the effects of sustained social distancing [27].

Immediately after COVID-19 is suspected medical and nursing support must be provided at home. This should include a swab test, pharmacological treatment and if needed, oxygen therapy. The main objective of this approach is to limit the hospitalization of patients. To guarantee the provision of medical and nursing support at home, it is important to ensure the continuity of assistance as well as the availability of drugs and devices. GPs and other professionals must be enabled to work safely and share standardized protocols of assessment and clinical management for COVID-19 patients.

The clinical course of the disease and eventual side effects of medications should be regularly evaluated. Family members should be instructed to protect themselves from the risk of infection. GPs should consider hospitalization in case of worsening symptoms (i.e., fever, fatigue, dyspnoea, change of consciousness) or whenever the family is unable to provide adequate support.

Table 2 Key principles for the care of older people in the COVID-19 pandemic

Older living at home
Proactive assessment by a general physician or family nurses to evaluate
Development of typical COVID-19 symptoms and of atypical symptoms, such as sudden changes in cognitive status, onset of behavioural disturbances or decline in functional status which may lead to suspect infection
Caregiving
Treatment of chronic diseases
If COVID19 is suspected provide visit at home
Performing rapid swab test
Start pharmacological treatment and evaluate oxygen need
Evaluate frailty, multimorbidity, geriatric syndromes, and side effects of treatments
Educate family members to manage isolation and protect the patients
Assess the need of hospitalization
Older in hospital
Establish patients' prognosis on admission and define the need of low, medium or high intensive care
Implement protocols for the prevention and treatment of delirium, manage behavioural and functional complication, provide supportive and palliative care
Plan the care after discharge
Older living in long term care facilities
If typical or atypical symptoms of COVID19
Perform confirmatory tests
Isolate positive cases
Provide specific and supportive treatment
Evaluate the need of hospitalization for the (by assessing the life-expectancy, the general health status, the cognitive and functional status, and the severity of symptoms) as well as the LTC ability to accomplish the goals of the care
Involve patient family in therapeutic choices
Provide PPEs and monitor the COVID-19 presence among care professionals

Older patients needing hospitalization

For older patients who need hospitalization, we suggest the creation of specific areas within the hospitals, to guarantee treatments tailored for frail patients. For instance, it is well known that non-pharmacological approaches are more effective than pharmacological ones in the prevention and treatment of hyperactive delirium [28].

Within geriatric COVID-19 hospital wards, protocols should be made available to establish the patient's prognosis on admission, to manage the behavioural and functional complications as well as to proactively define post-discharge care. Low-intensity hospital wards, with high capacity for supportive and palliative care should also be arranged, with attention to comfort and end-of-life issues [29] The rapid conversion of most hospital beds during the epidemic did not take these needs into adequate consideration, resulting in an insufficient differentiation in the levels of care and the lack of specific services for the frail elderly.

Older living in long term care facilities

Older residents in LTC facilities showing symptoms related to COVID-19 should be systematically and timely tested to isolate positive cases and to implement specific pharmacological treatment and supportive care, along with oxygen treatment if needed [30]. Asymptomatic residents who had contacts with confirmed cases should be tested and, if positive, isolated and periodically checked for specific and nonspecific symptoms. Hospitalization should be limited to cases that cannot be managed in LTC facilities, and should be considered only after an assessment of the patient's general health, cognitive and functional status and after an evaluation of patient's priorities and wills. Family involvement in choices regarding the treatment is recommended. Monitoring of possible contagion among health care professionals should be systematically carried out, and the availability and correct use of PPE should be periodically assessed [31].

Conclusion

Despite the most severe consequences of the COVID-19 pandemic impact the elderly, geriatricians were not involved in health-policy decision-making, in the drafting of guidelines and in deciding the allocation of resources [32]. Here, we provide some practical indications to care for older patients affected by COVID-19 in different care settings. We are

aware of the difficulty in applying these recommendations, mainly because of the fragmentation of the Italian social and healthcare system in terms of organization and resources. COVID-19 has resulted in a surge of ageism by the public. The fact that the majority of those who die from the virus are older adults has been regarded with a kind of relief by the general population; this pushes us to recall the fact that, as the elderly are at a higher risk from COVID-19, we must all act to support and protect the elderly people who live alone in the community, the more frail and those living in LTC [33]. Older patients are known to have an increased risk of severe SARS-CoV-2 infection, but it is unclear whether age per se is the main cause of this concurrence. Furthermore, the role of living conditions, comorbidity, frailty and specific biological modifications related to aging have not been fully understood.

In the first phase of this pandemic actions of clinicians and institutions have often been driven by the need of the management of a dramatic crisis with too little time and too few resources to be allocated to the care of elderly and frail patients. We strongly believe that now the principles of geriatric medicine should be at the hearth of the care of COVID-19 patients since they are of the utmost importance to provide the best possible care for elderly patients [34].

Acknowledgements We acknowledge Luca Bianchetti, MD, for the revision of the text.

Author contributions All authors contributed to the ideation of the article, the revision of the literature, the drafting and revision of the work. The authors declare that the work presented is original and has not been published elsewhere in any form or language (partially or in full).

Funding No funding.

Data availability Not applicable.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethics approval this is a review study; no ethical approval is required.

Consent to participate Not applicable.

Consent for publication Not applicable.

Code availability Not applicable.

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