Two Interventions to Provide Support to Long-Term Care Facilities During the Covid-19 Pandemic

CRISTINA BERMEJO BOIXAREU (cristina_bermejo@hotmail.com)

Puerta del Hierro University Hospital of Majadahonda: Hospital Universitario Puerta del Hierro Majadahonda

Macarena Díaz de Bustamante Ussía

Puerta del Hierro University Hospital of Majadahonda: Hospital Universitario Puerta del Hierro Majadahonda

Gema Piña Delgado

Puerta del Hierro University Hospital of Majadahonda: Hospital Universitario Puerta del Hierro Majadahonda

Armando Pardo Gómez

Puerta del Hierro University Hospital of Majadahonda: Hospital Universitario Puerta del Hierro Majadahonda

Lucia Fernandez Arana

Puerta del Hierro University Hospital of Majadahonda: Hospital Universitario Puerta del Hierro Majadahonda

Verónica García Cárdenas

Puerta del Hierro University Hospital of Majadahonda: Hospital Universitario Puerta del Hierro Majadahonda

Javier Gómez-Pavón

Hospital Central de la Cruz Roja: Hospital Central de La Cruz Roja San Jose y Santa Adela

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Research article

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Abstract

BACKGROUND

The aim of this article is to describe two interventions carried out during the first wave of the COVID19 pandemic to support healthcare personnel at 60 nursing homes, located within the coverage area of a 613-bed university tertiary care hospital.

METHODS

In the first intervention, a geriatrician provided telephone support, including help with the clinical management of residents, the administration of intravenous and/or hospital-based treatments, provision of oxygen therapy at the facility, blood and diagnostic tests, and the coordination of disinfection by the Military Emergency Unit. In the second intervention, the multidisciplinary care team also performed on-site visits to the nursing homes.

RESULTS

In the first telephone support intervention 4,553 cases were evaluated. Of these cases, 645 residents (14.2%) were given on-site intravenous therapy; 419 cases (9%) were prescribed oxygen therapy, and 573 nasopharyngeal exudate samples were tested (RT-PCR). In the second intervention, 4,965 residents were assessed on-site. Of these, intravenous treatment was prescribed in 316 patients (6.3% of cases) and oxygen therapy in 634 (12.7%). A total of 2.458 RT-PCR tests were performed on residents and workers. There was a decrease in the mortality rate ten days after the implementation of the second intervention.

CONCLUSIONS

Geriatrician-directed telephone support is a highly efficient and essential approach to coordinate long-distance healthcare delivery at nursing homes, but it doesn't seem to reduce mortality. Interventions, including multidisciplinary/Geriatrics visits in nursing homes during pandemics are needed to study if mortality rates can be reduced.

Background

Current data from the Ministry of Health in Spain indicates that more than 3.428.354 people have been diagnosed with coronavirus disease 2019 (COVID-19), with more than 77,102 deaths to date (1). Initial estimates suggest that more than 86% of these deaths occurred in patients age 70 or older, with patients in nursing homes accounting for 67% of deaths in this older subpopulation[1]. This high mortality rate is likely attributable to increased vulnerability to COVID-19 among the institutionalized elderly, due to the

high prevalence of chronic disease, immunosenescence, chronic inflammation, frailty, and dependence[2]. The risk of contagion could also be higher due insufficient staffing levels, scant protective measures, inadequate training, and the need for close physical contact to deliver care, all of which may increase the likelihood of disease spread[2–4].

In this context, the aim of the present study was to describe two interventions carried out to support healthcare personnel at nursing homes, located within the coverage area of a 613-bed university tertiary care hospital.

Methods

The health catchment area of our hospital includes 60 nursing homes, with a total of 6,323 residents. Two separate interventions were performed during the pandemic. In the first intervention, conducted from March 16th to May 20th, 2020, a geriatrician provided telephone and email support to the centres from 8:00 a.m. to 10:00 p.m. daily. This support initiative included systematic support in the following areas: clinical management; administration of intravenous and/or hospital-based treatments; provision of oxygen therapy to be performed at the facility; blood and diagnostic tests, including reverse-transcriptase polymerase chain reaction (RT-PCR) to detect COVID-19; coordination of disinfection by the Military Emergency Unit (UME).

A second intervention, was offered supplementary to the first (and therefore overlapping), was initiated on April 15th and available through May 10th, 2020. In this intervention, a multidisciplinary care team performed on-site visits to the nursing homes. These teams (n = 12) were comprised of healthcare staff from up to 16 different hospital units. The teams evaluated the residents of these facilities to check for the presence of symptoms and, if appropriate, initiate early treatment, including prophylactic anticoagulation. The teams also administered RT-PCR tests to both residents and staff, and assisted the staff in separating the patients who tested positive into designated areas within the facility in order to protect those who tested negative. They also trained healthcare staff in prevention and treatment measures for COVID-19. As the situation at the facilities improved, these interventions were gradually reduced, and by May 10th all such interventions were considered finalised.

Results

In the first intervention (telephone/email support), a total of 4,553 cases were evaluated. Of these, 645 residents (14.2%) were administered on-site intravenous therapy; 419 cases (9%) were prescribed oxygen therapy, and 573 nasopharyngeal exudate samples were tested (RT-PCR). In the second intervention, 4,965 residents were assessed on-site. Of these residents, intravenous treatment was prescribed in 316 patients (6.3% of cases) and oxygen therapy in 634 (12.7%). A total of 2.458 RT-PCR tests were performed in residents and workers. Figure 1 shows the weekly mortality rate in the 60 facilities from March 24th to May 19th, 2020. As that figure shows, there was a decrease in the mortality rate ten days after the implementation of the second intervention.

Conclusions

The two interventions performed by these specialised teams facilitated the clinical management of many residents at the nursing homes. This included intravenous treatments and medication (961 cases), as well as oxygen therapy (1053 cases), all of which helped to minimise hospital admissions in dependent elderlies with cognitive impairment.

These in-person healthcare teams performed widespread testing for COVID-19 and also facilitated the separation of residents into designated areas/units within the facility[5]. These teams allowed for early initiation of treatment in patients with atypical, potentially severe symptoms in understaffed centres. The on-site intervention also allowed for better and more intensive training in preventive measures.

There is little doubt that geriatrician-directed telephone support is a highly efficient and essential approach to coordinate distant healthcare delivery at nursing homes, but mortality doesn't seem to be reduced in other studies with the same intervention[6]. However, the reduction in mortality rates was found within ten days of initiating the second intervention, with the number of deaths falling by 90% at day 18, although this could also be attributed to Spain's overall decrease in COVID-19 cases. Our study suggests, as well as Tarteret et al.[7] that increasing healthcare staff in nursing homes and establishing a connection with general hospitals should be implemented, to deal with present and future health disasters in nursing homes. Interventions to provide support to Nursing Homes that improve mortality outcomes are needed[7].

Declarations

Ethics approval and consent to participate: Research has been performed in accordance with the Declaration of Helsinki, also under the supervision of the hospital´s ethics committee. (Comité de Ética de la Investigación del Hospital Universitario Puerta de Hierro Majadahonda: https://investigacionpuertadehierro.com/comites/)

Consent for publication: Participants did not need to consent to participate as it was observational research that collected data from health records.

Availability of data and materials: Further information and documentation to support is available to the Editor, as requested.

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Authors' contributions: All authors have met the criteria for authorship as stated in the Uniform Requirements for Manuscripts Submitted to Biomedical Journals. Contributions of each author to the manuscript are as follows:

- *CBB: Designed and directed the Project. Worked in writing the manuscript.*

- *MDBU: Directed the Project, worked in the implementation of the interventions*
- *GPD: Was involved in planning and supervised both interventions*
- *APG: worked in the implementation of the interventions. Supervised the work*
- *LFA: worked in the implementation of the interventions. Supervised the work*
- *VGC: Processed the data of both interventions. Designed the figure*
- *JGP: Analysis of the results and worked on the manuscript.*

All authors performed both interventions and performed the measurements. All authors discussed the results and commented on the manuscript.

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ABBREVIATIONS

Not applicable

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Figures

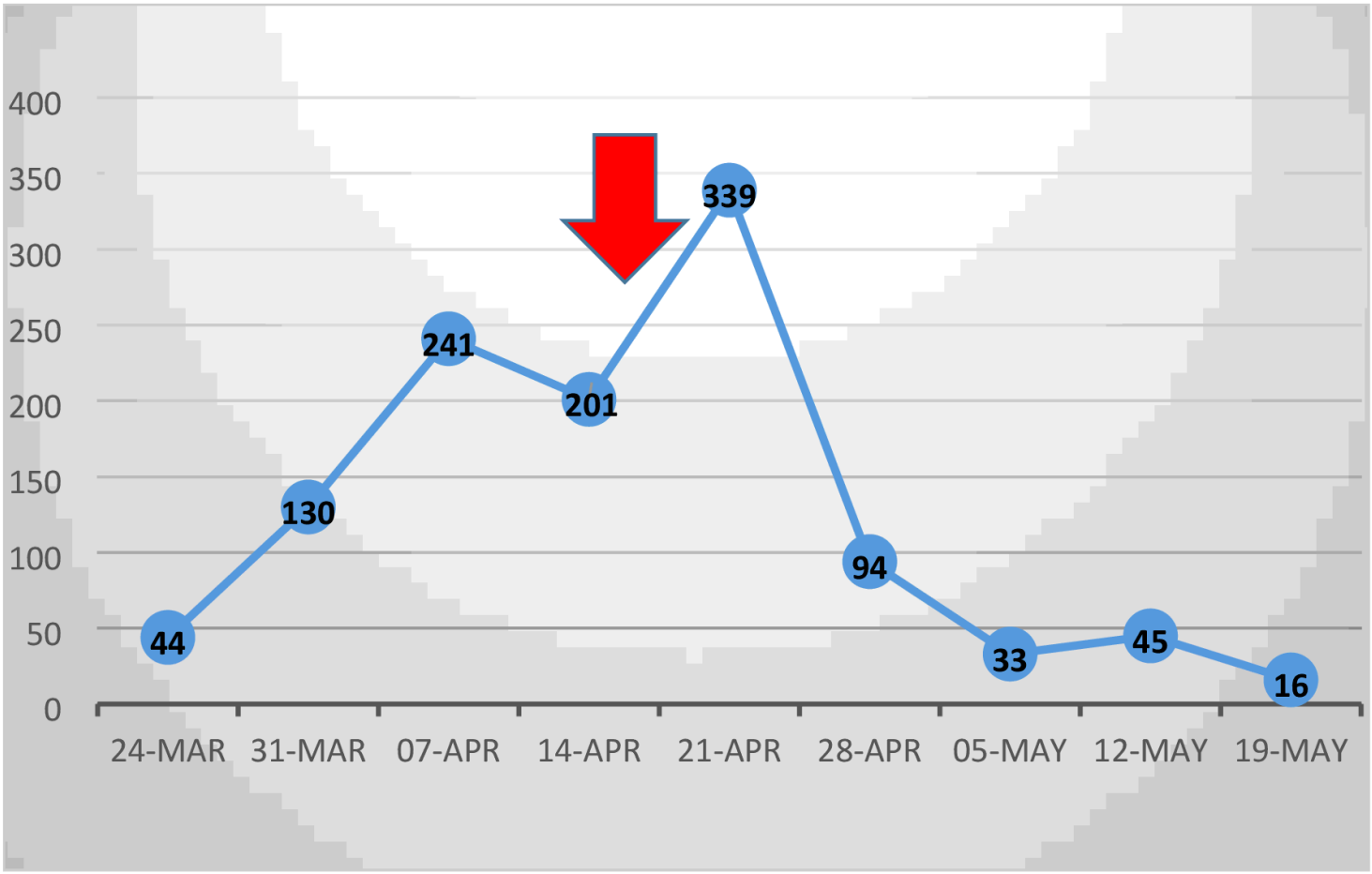

Figure 1

Weekly mortality data in the 60 nursing homes with the 6.323 residents. Red arrow: Second intervention: on-site visits.