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mechanism of COVID-19–associated weight loss as well optimal strategies for identification, prevention, and treatment of COVID-19–associated weight loss.

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### References

1. Naja F, Hamadeh R. Nutrition amid the COVID-19 pandemic: A multi-level framework for action. *Eur J Clin Nutr* 2020;74:1117–1121.
2. Morley JE, Kalantar-Zadeh K, Anker SD. COVID-19: A major cause of cachexia and sarcopenia? *J Cachexia Sarcopenia Muscle* 2020;11:863–865.
3. Shi SM, Bakaev I, Chen H, et al. Risk factors, presentation, and course of COVID-19 in a large, academic long-term care facility. *J Am Med Dir Assoc* 2020;21:1378–1383.e1.
4. Danilovich MK, Norrick CR, Hill KC, Conroy DE. Nursing home resident weight loss during Coronavirus Disease 2019 restrictions. *J Am Med Dir Assoc* 2020;21:1568–1569.
5. Collison M, Beiting K, Walker J, et al. Three-tiered COVID-19 cohorting strategy and implications for memory care. *J Am Med Dir Assoc* 2020;21:1560–1562.
6. Newman AB, Yanez D, Harris T, et al. Weight change in old age and its association with mortality. *J Am Geriatr Soc* 2001;49:1309–1318.

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## Should We Prescribe Antibiotics in Older Patients Presenting COVID-19 Pneumonia?



coinfections have been highlighted, although in limited proportions.<sup>4–6</sup> There is currently no distinctive tool to conclusively distinguish SARS-CoV-2 pneumonia from viral-bacterial coinfections, and atypical symptoms are particularly frequent in older patients.<sup>7</sup> Recent guidelines suggest a restrictive use of antibacterial drugs in patients with COVID-19.<sup>6,8</sup> However, the level of evidence for such recommendations is very low, and antibiotics are widely prescribed in practice,<sup>4,5</sup> especially in older patients.<sup>9</sup>

To our knowledge, whether systemic antibiotic therapy should be prescribed in acute pneumonia patients testing positive for COVID-19 has not been evaluated yet in a geriatric setting. In a multicenter retrospective cohort study of older patients with a SARS-CoV-2 pneumonia, we sought to assess whether the use of antibiotics was associated with lower mortality.

We included 124 consecutive patients aged  $\geq 75$  years hospitalized from March 1 to May 1, 2020, in 4 hospitals of one of the French regions most affected by the first wave of COVID-19. Patients had radiology-proven pneumonia and tested positive for SARS-CoV-2 (Real-Time Polymerase Chain Reaction Novodiag; Movi-diag, Espoo, Finland). We compared mortality 1 month after admission between patients with and without antibiotic treatment (Supplementary Material).

Pneumonia was defined according to the American guidelines, in the acute presence of (1) 2 or more of the following signs: new cough, sputum production, dyspnea, pleuritic pain, abnormal temperature ( $<35.6^{\circ}\text{C}$  or  $>37.8^{\circ}\text{C}$ ), or altered breathing sounds on auscultation and (2) a new infiltrate on chest imaging.<sup>10</sup>

Of the 124 patients with pneumonia, 102 (82%) received antibiotics and 22 received none. The 2 groups were similar in terms of sex (male 52% vs 48%,  $P = .9$ ), age [median age (interquartile range): 85 (81–89) vs 86 (83–90),  $P = .4$ ] and comorbidities [median Charlson Comorbidity Index: 2 (1–4) vs 3 (2–4),  $P = .2$ ]. However, patients with antibiotics had more severe presentation (severe or critical pneumonia according to WHO criteria<sup>10</sup>: 49% vs 23%,  $P = .02$ ). Alveolar condensation was identified on the CT scan in 38% and 27%, respectively ( $P = .3$ ). The antibiotic regimens included third-generation cephalosporins (3GC) (75 patients), macrolides (50 patients), penicillin + beta-lactamase inhibitor (40 patients), and fluoroquinolones (9 patients). Antibiotic associations were frequent, especially 3GC with macrolides (45 patients).

**Fig. 1.** One-month survival after admission for SARS-CoV-2 pneumonia in older patients with or without antibiotics.

To the Editor:

The COVID-19 pandemic is responsible for a particularly high level of morbidity in the older population.<sup>1</sup> Most deaths are the result of severe viral pneumonia, for which therapeutic management is still a matter of debate. Corticosteroids are to date the only therapeutic class that has proven benefit in terms of mortality in hypoxemic SARS-CoV-2 pneumonia,<sup>2</sup> whereas the benefit of tocilizumab remains unclear.<sup>3</sup> However, such therapeutics are associated with increased risk of bacterial infection, especially among older individuals. Moreover, the distinction between bacterial and viral pneumonia is particularly difficult, and

As shown in Figure 1, mortality rates did not significantly differ between the 2 groups at 1 month (36% of death in both groups;  $P > .99$ ). After adjustment on WHO severity classes,<sup>8</sup> Charlson Comorbidity Index, age, sex, and mortality did not significantly differ in the 2 groups [adjusted hazard ratio (95% confidence interval) = 0.88 (0.40-1.92),  $P = .7$ ]. Median duration of hospital stay did not significantly differ between the 2 groups [11 (7-16) vs 10 (7-19) days,  $P = .8$ ]. Bacteremia during hospitalization was rare in both groups (5% vs 4%,  $P = .9$ ). One case of *Clostridioides difficile* colitis was diagnosed in the antibiotics group.

In this observational study in older comorbid inpatients presenting severe forms of COVID-19, 1-month mortality was very high (nearly a third of patients) and did not appear to widely differ under antibiotic treatment. If confirmed, these preliminary results from a relatively small cohort of older inpatients with severe SARS-CoV-2 pneumonia suggest that the use of antimicrobial drugs should be restricted.

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### Supplementary Data

Supplementary data related to this article can be found online at <https://doi.org/10.1016/j.jamda.2020.11.034>.

### References

1. Bonanad C, García-Blas S, Tarazona-Santabalbina F, et al. The effect of age on mortality in patients with COVID-19: A meta-analysis with 611,583 subjects. *J Am Med Dir Assoc* 2020;21:915–918.
2. RECOVERY Collaborative Group, Horby P, Mafham M, et al. Dexamethasone in hospitalized patients with COVID-19—Preliminary report. *N Engl J Med* 2020 Jul 17;NEJMoa2021436. [Epub ahead of print].
3. Stone JH, Frigault MJ, Serling-Boyd NJ, et al. Efficacy of tocilizumab in patients hospitalized with COVID-19. *N Engl J Med* 2020;383:2333–2344.
4. Karami Z, Knoop BT, Dofferhoff ASM, et al. Few bacterial co-infections but frequent empiric antibiotic use in the early phase of hospitalized patients with COVID-19: Results from a multicentre retrospective cohort study in the Netherlands. *Infect Dis (Lond)* 2021;53:102–110.
5. Rawson TM, Moore LSP, Zhu N, et al. Bacterial and fungal co-infection in individuals with coronavirus: A rapid review to support COVID-19 antimicrobial prescribing. *Clin Infect Dis Off Publ Infect Dis Soc Am* 2020;71:2459–2468.
6. Sieswerda E, de Boer MCJ, Bonten MMJ, et al. Recommendations for antibacterial therapy in adults with COVID-19 – an evidence based guideline. *Clin Microbiol Infect Off Publ Eur Soc Clin Microbiol Infect Dis* 2020.
7. Annweiler C, Sacco G, Salles N, et al. National French survey of COVID-19 symptoms in people aged 70 and over. *Clin Infect Dis* 2020 Jun 18:ciaa792 [Epub ahead of print].
8. Clinical management of COVID-19. Available at: <https://www.who.int/publications-detail-redirect/clinical-management-of-covid-19>. Accessed November 6, 2020.
9. Dieringer TD, Furukawa D, Graber CJ, et al. Inpatient antibiotic utilization in the Veterans Administration during the COVID-19 pandemic. *Infect Control Hosp Epidemiol* 2020 Oct 20 [Epub ahead of print].
10. Metlay JP, Waterer GW, Long AC, et al. Diagnosis and treatment of adults with community-acquired pneumonia. An official clinical practice guideline of the American Thoracic Society and Infectious Diseases Society of America. *Am J Respir Crit Care Med* 2019;200:e45–e67.

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## Community-Based Long-Term Care Has Lower COVID-19 Rates and Improved Outcomes Compared to Residential Settings



### To the Editor:

The prevalence of COVID-19 in nursing homes (NHs) and assisted living (AL) has generated considerable attention because of residents' vulnerability. For example, a recent study by Parikh et al<sup>1</sup> reported higher-than-expected asymptomatic cases in a point prevalence study in a subset of Connecticut NHs in May 2020. Yet little is known about COVID-19's impact on people receiving long-term services and supports in home and community-based settings (HCBS) as an alternative to NH or AL care. Using Connecticut statewide data, this study compares positive cases and deaths due to COVID-19 in 3 Medicaid HCBS programs from March through July 2020 to results for NH and AL residents over the same period. It also reports on COVID-related hospital and NH admissions for the HCBS programs.

### Methods

This analysis used (1) Medicaid HCBS data collected by Connecticut's Department of Social Services and (2) NH and AL data collected by its Department of Public Health. The Department of Social Services collected data on COVID-19 cases, deaths, and hospital and NH admissions for all persons in the CT Home Care Program (CHCP) (age  $\geq 65$  years), Personal Care

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