ISSN 2307-8960 (online)

World Journal of *Clinical Cases*

World J Clin Cases 2022 November 16; 10(32): 11665-12065

Published by Baishideng Publishing Group Inc

World Journal of Clinical Cases

Contents Thrice Monthly Volume 10 Number 32 November 16, 2022

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The *WJCC* is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for *WJCC* as 1.534; IF without journal self cites: 1.491; 5-year IF: 1.599; Journal Citation Indicator: 0.28; Ranking: 135 among 172 journals in medicine, general and internal; and Quartile category: Q4. The *WJCC*'s CiteScore for 2021 is 1.2 and Scopus CiteScore rank 2021: General Medicine is 443/826.

RESPONSIBLE EDITORS FOR THIS ISSUE

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

PUBLICATION DATE

November 16, 2022

World Journal of Clinical Cases

Submit a Manuscript: https://www.f6publishing.com

World J Clin Cases 2022 November 16; 10(32): 12056-12058

DOI: 10.12998/wjcc.v10.i32.12056

ISSN 2307-8960 (online)

LETTER TO THE EDITOR

Insight into appropriate medication prescribing for elderly in the COVID-19 era

Amr S Omar, Rasha Kaddoura

Specialty type: Cardiac and cardiovascular systems

Provenance and peer review: Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): 0
Grade B (Very good): B
Grade C (Good): C
Grade D (Fair): 0
Grade E (Poor): 0

P-Reviewer: Pan S, China; Pandey NM, India

Received: August 14, 2022
Peer-review started: August 14, 2022
First decision: September 25, 2022
Revised: September 22, 2022
Accepted: October 13, 2022
Article in press: October 13, 2022
Published online: November 16, 2022

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Abstract

Coronavirus disease 2019 (COVID-19) complicates clinical management in elderly population. There is an additional need to properly treat and monitor elderly COVID-19 patients. This paper discusses the inappropriate medication prescribing in the elderly and suggests an updated valid assessment tool considering COVID-19 and its treatment.

Key Words: Atrial fibrillation; Beta blockers; COVID-19; Elderly

Core Tip: There is an additional need to properly treat and monitor elderly coronavirus disease 2019 (COVID-19) patients. This paper discusses the inappropriate medication prescribing in the elderly and suggests an updated valid assessment tool considering COVID-19 and its treatment.

Citation: Omar AS, Kaddoura R. Insight into appropriate medication prescribing for elderly in the COVID-19 era. *World J Clin Cases* 2022; 10(32): 12056-12058
URL: https://www.wjgnet.com/2307-8960/full/v10/i32/12056.htm
DOI: https://dx.doi.org/10.12998/wjcc.v10.i32.12056

TO THE EDITOR

Often as individuals age, medication use increases, however, the capacity of the human body to cope with medications also changes. Pharmacokinetics in the elderly is much more complex and consequently, the list of contraindicated or relatively contraindicated medications is greater. Polypharmacy, inappropriate medication prescribing and multimorbidity in the elderly result in inherent challenges[1]. The recent coronavirus disease 2019 (COVID-19) pandemic brought the complexity of this issue into sharp focus. COVID-19 led to higher mortality and hospitalization rates in the elderly compared to the young. Frailty and comorbidities increased the likelihood of a more severe clinical course. Furthermore, COVID-19 associated illness was often accompanied by cardiovascular complications, such as arrhythmia, myopericarditis, or decompensated heart failure[2].

One of the most frequently used cardiac medications are beta-blockers, they have shown benefit in elderly patients with common cardiovascular diseases such as ischemic heart disease, atrial fibrillation, and heart failure. Santillo and Migale, in their review, discussed the role of beta-blocker therapy in elderly patients with COVID-19. The authors argued that although beta-blockers do not prevent infection in elderly, their use was associated with improved survival and a less severe COVID-19 clinical course. They also argued against the discontinuation of beta-blockers while having the disease[2]. However, in their review, nine of the ten studies analysed beta-blocker subgroups which represented only 20% of the enrolled patients (range 13%–41%), which is a significant limitation in making a firm conclusion. We certainly agree with the authors' assertion that further research is needed.

To complement the published review and further enrich discussion, we would like to highlight examples where there is a potential indication for a beta-blocker, however, there may be legitimate reasons for initiation in the elderly.

Should we consider routine screening for atrial fibrillation in elderly patients with COVID-19? The GeroCovid Registry reported atrial fibrillation in 21% of elderly patients hospitalized with COVID-19, which was associated with a significant mortality rate[3]. In the randomized multicentre STROKESTOP study, early detection of atrial fibrillation in the elderly, through routine screening, was safe and significantly reduced stroke and death[4]. However, functional, and cognitive status in the elderly is an important factor to be considered before starting therapy. In a large cohort study (n = 15720) of nursing home residents, beta-blocker initiation after acute myocardial infarction correlated with functional decline in residents with pre-existing functional or cognitive impairment. This effect was not seen in those with intact functional and mental abilities. Needless to say, beta-blocker use yielded a significant mortality benefit in all the groups and subgroups of the study, despite its negative impact on functional and cognitive status in some[5].

The latter example highlights the importance of a more nuanced/selective approach to medication prescribing in the elderly. It is known that there are implicit (*i.e.*, based on clinical judgement) and explicit (*i.e.*, based on prespecified standards) criteria for identifying inappropriate prescribing or even determining the preferred medications to use. Such criteria have been used to develop relevant assessment tools[6,7]. Beers Criteria, for example, were examined in several studies which found a significant association between inappropriate medications and unfavourable clinical outcomes, including mortality, hospitalization, and adverse drug events and vice versa. Assessment tools are intended to alert clinicians to potential inappropriate prescribing rather than replacing clinical judgement and individualized decision-making for patients. A systematic literature search identified 46 tools that varied in methodology, clinical validation, comprehensiveness, complexity, strength, and limitations[6]. A systematic scoping review focusing on respiratory disorders (*i.e.*, respiratory failure, asthma, and chronic obstructive pulmonary disease) identified 19 tools. Beta-blockers were the most frequent drug class resulting in an exacerbation of respiratory diseases due to high mucus production and bronchoconstriction (*i.e.*, β_2-receptor antagonism), which worsens the respiratory condition and leads to respiratory depression. Choosing a cardio-selective beta-blocker is suggested in medical management[8] which is consistent with what has been suggested by Santillo and Migale in their review [2]. However, not all the tools propose therapeutic management. In the COVID-19 era, it is important to carefully assess treatment, taking account of drug interactions, and potentially inappropriate medications in the elderly to prevent the worsening of COVID-19 and other comorbidities[8]. Although several criteria to assessing inappropriate prescribing in elderly individuals (*i.e.*, age ≥ 65 years) are available, each has limitations, and many are outdated. Moreover, criteria for vulnerable and frail older individuals are lacking[7]. It is probably the time to update an existing tool or develop a new one which is comprehensive and considers specific relevant criteria for the elderly including vulnerable and frail subgroups. The criteria should consider additional aspects related to COVID-19 and its treatment which is known to interact with many medications.

CONCLUSION

In conclusion, given the COVID-19 time, there is an additional need to properly treat and monitor elderly patients with cardiovascular diseases to prevent poor prognosis related to COVID-19. Paying

close attention to the use of inappropriate cardiac medications is likely to contribute to better clinical management and hopefully outcomes too. A valid tool is important for clinical decision-making in daily practice.

ACKNOWLEDGEMENTS

Authors acknowledge the support of Dr Sajad Hayat, Electrophysiology Consultant at the Heart Hospital, Hamad Medical Corporation.

FOOTNOTES

Author contributions: Omar AS contributed to initial writing, submission, reviewing; Kaddoura R contributed to writing, formulated the manuscript, critical revision.

Conflict-of-interest statement: All the authors declare that they do not have conflict of interest.

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S-Editor: Liu JH
L-Editor: A
P-Editor: Liu JH

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