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Survival improvement through well-designed intensive care unit architecture

Dong Hyun Lee

Department of Intensive Care Medicine, Changwon Hanmaeum Hospital, Changwon, Korea

With advancements in critical care medicine (CCM), its scope has expanded beyond traditional boundaries. Furthermore, these newly incorporated areas have become integral components of CCM. For instance, nutritional support and rehabilitation in the intensive care unit (ICU), previously regarded merely as "supportive therapies" or "preferable but not essential," are now universally recognized as core elements of CCM.

In this context, Jeong et al. [1] reported valuable findings that could serve as a milestone in ICU design. Designing an ICU and arranging patients or medical equipment are typically associated with considerations such as healthcare providers' convenience, patient comfort, work efficiency, or infection control. However, predicting that admitting patients to single-patient rooms (SPRs) could lead to improved patient survival would be challenging.

Jeong et al. [1] analyzed data from 3,179 ICU patients at three distinct hospitals in South Korea and reported better survival rates among patients admitted to SPRs compared to those admitted to multi-patient rooms (MPRs). This result is remarkable—almost hard to believe—as the mortality rate of patients in SPRs was 8.5%, approximately half of the 15.4% mortality rate observed among patients in MPRs. This striking result was obtained through propensity score matching to minimize bias.

Interest in and the necessity for SPRs in ICUs have significantly increased due to the coronavirus disease 2019 (COVID-19) pandemic. SPRs offer distinct advantages, including enhanced patient privacy and reduced risk of infection spread; however, they also present certain drawbacks. The Society of Critical Care Medicine recently published several recommendations regarding ICU design, one of which advises admitting patients to SPRs [2]. The guidelines indicate that while SPRs have both advantages and disadvantages compared to MPRs, the advantages appear to outweigh the drawbacks. For example, SPRs limit patient visibility and can impose restrictions on medical staff, but they are beneficial for infection control and protecting patient privacy. Nevertheless, the level of evidence for this recommendation remains low due to a lack of well-designed studies and inconsistent results.

It is encouraging that this remarkable study has been published in our journal, although further studies are anticipated in the future. However, until now, no study of comparable scale has reported the survival benefits of SPR admission in the ICU. The significance of this study might be comparable to that of the large observational study first reporting the survival benefit of early enteral feeding in ICU patients [3]. As a member of the editorial board of *Acute and Critical Care*, I hope this impressive study will be recognized as a pioneering

Editorial

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Corresponding author
Dong Hyun Lee
Department of Intensive Care Medicine, Changwon Hanmaeum Hospital, 8 Yongdong-ro 57beon-gil, Uichang-gu, Changwon 51139, Korea
Tel: +82-55-255-0411
Email: rvot@daum.net

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landmark, widely cited by researchers and clinicians alike.

CONFLICT OF INTEREST

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ORCID

Dong Hyun Lee https://orcid.org/0000-0001-6253-3396

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