

Factors related to hesitancy for COVID-19 vaccine booster doses
among patients with autoimmune and rheumatic diseases in Japan:

A single-center cross-sectional survey.

by

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Abstract

Background: Coronavirus disease 2019 (COVID-19) vaccine booster doses (3 doses or more) are recommended for patients with autoimmune and rheumatic diseases (ARDs) by the American College of Rheumatology (ACR) [1]. However, hesitancy against the vaccine including booster doses is still reported to be a problem for ARDs patients [2-5]. In addition, hesitancy on the frequency of COVID-19 vaccine booster doses and its associated factors among ARDs patients are little investigated in Japan. Therefore, we aimed to study the current state of hesitation for booster doses of COVID-19 vaccine and identify the factors related to decision-making of getting the booster doses among patients with ARDs in Japan.

Methods: We carried out a single-center cross-sectional survey on outpatients with ARDs who visited the Immuno-Rheumatology Center in St Luke's International Hospital from 1 October to 30 November in 2023. The collected data included patients' characteristics, COVID-19 vaccination related status, preferences of decision-making and health related status. Multivariate logistic regression analysis was performed to assess independent factors associated with booster doses hesitancy of COVID-19 vaccine.

Results: A total of 241 patients were included in the analyses. 198 patients (82.2%) got booster doses and 43 patients (17.8%) didn't. Being elderly (adjusted odds ratio [aOR] = 0.43, 95% CI: 0.19, 0.95, $P = 0.037$), having rheumatoid arthritis (RA) (aOR = 0.41, 95% CI: 0.19, 0.92, $P = 0.030$) and being recommended by a physician to get vaccinated (aOR = 0.47, 95% CI: 0.23, 0.95, $P = 0.035$) were independently associated with having booster doses. The main reasons of booster doses hesitation were concerns about adverse reactions and long-term safety.

Conclusion: Being non-elderly, non-RA and having no recommendations from their physician to get vaccinated were identified as independent risk factors of hesitancy for COVID-19 vaccine booster doses. Our findings could help to identify the ARDs patients with booster doses hesitation and promote their appropriate decision-making for the vaccination supported by physicians' advice.

Keywords: COVID-19, vaccine, booster, hesitancy, autoimmune and rheumatic diseases

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List of abbreviations

ACR	American College of Rheumatology
aOR	Adjusted odds ratio
ARDs	Autoimmune and rheumatic diseases
CDC	Centers for Disease Control and Prevention
COVID-19	Coronavirus disease 2019
HCPs	Healthcare professionals
JCR	Japan College of Rheumatology
RA	Rheumatoid arthritis