Beneficial impact of first-line mogamulizumab-containing chemotherapy in adult T-cell leukemia-lymphoma (ATL)

Authors:
<Tatetsu H\(^1\), Shichijo T\(^1\), Nosaka K\(^1\), Higuchi Y\(^1\), Endo S\(^1\), Inoue Y\(^1\), Toyoda K\(^1\), Kikukawa Y\(^2\), Kawakita T\(^3\), Yasunaga JI \(^1\), Matsuoka M \(^1\)>

\(^1\) Department of Hematology, Rheumatology, and Infectious Diseases, Graduate School of Medical Sciences, Faculty of Life Sciences, \(^2\)Department of Hematology and Oncology, Kumamoto City Hospital, \(^3\)Department of Hematology, National Hospital Organization Kumamoto Medical Center

Background:
Even in the modern era, the survival outcomes of aggressive adult T-cell leukemia-lymphoma (ATL) remain dismal. For transplant-eligible patients with ATL, allogeneic hematopoietic stem-cell transplants (allo-HSCT) is a potentially curative treatment. However, 80–90% of aggressive ATL patients cannot receive allo-HSCT in Japan. Although chemotherapy in combination with Mog, an anti-CC-chemokine receptor 4 antibody, was approved in Japan in 2014 for untreated aggressive ATL, it is still unclear whether Mog-containing treatment prolongs survival for ATL, because of a difficulty of conducting further prospective randomized studies.

Methods:
To evaluate clinical outcomes in patients with aggressive ATL in the last decade, we retrospectively analyzed 73 patients with aggressive ATL at Kumamoto University Hospital between 2010 and 2021.

Results:
Among patients under 70 years old, the probability of 4-year overall survival (OS) was 46.6% in patients receiving allogeneic hematopoietic stem-cell transplants and 35.6% in non-transplanted patients. Of note, the probability of 4-year OS among non-transplanted patients was 43.6% in the first-line Mog-containing treatment group compared to 20.5% in the chemotherapy alone group (\(P = 0.025\)). Furthermore, focused on the elderly patients, the probabilities of 4-year OS in the Mog-containing treatment group were higher than those in the chemotherapy alone group: for patients over 65 years old, (40.3% vs. 12.5%; \(P = 0.009\)) and for patients over 70 years old, (33.3% vs. 10.0%; \(P = 0.015\)). Notably, among patients who received first-line Mog-containing treatment, cutaneous adverse reactions induced by Mog were associated with favorable prognosis.

Conclusion:
Mog-containing treatment prolonged the survival of non-transplanted patients with untreated aggressive ATL. Therefore, the first-line Mog-containing treatment has the potential to be a promising therapeutic strategy for transplant-ineligible patients with ATL, even in the elderly.
Disclosure of Interest Statement:
HT has received honoraria from Bristol Myers Squibb, Chugai Pharmaceutical, Eisai, Ono Pharmaceutical, SymBio Pharmaceuticals Limited and patents, and royalties from Mesoblast. KN has received consultancy fees, research funding and honoraria from Kyowa Kirin, research funding from Chugai Pharmaceutical, and honoraria from Celgene, Eisai, Meiji Seika Pharma, Janssen Pharmaceutical, Abbvie Inc. and Bristol Myers Squibb. MM has received research funding from Chugai Pharmaceutical and Kyowa Kirin. TS, YH, SE, YK, YI, KT, TK, and J-i.Y have no conflicts of interest to disclose.