

# Impact of Prior Taxane Exposure on Outcomes of Nab-Paclitaxel in Previously Treated Non-Small Cell Lung Cancer: A Retrospective Analysis

S. Nakamichi, S. Matsuki, A. Fukuizumi, Y. Terashima, E. Miyake, K. Miyadera, A. Suzuki, Y. Kato, K. Hisakane, S. Takeuchi, K. Kasahara, M. Seike



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## INTRODUCTION

- Few studies have investigated cross-resistance among taxanes—acquired resistance to structurally related agents—in patients with non-small cell lung cancer (NSCLC).
- Previous paclitaxel treatment has been reported not to affect the efficacy of subsequent docetaxel treatment (J Thorac Oncol 2008;3:412-6).
- Although prior exposure to other taxanes was documented in a Japanese prospective study of single-agent nab-paclitaxel, detailed outcomes according to prior taxane use were not reported. Thus, cross-resistance between nab-paclitaxel and other taxanes has not been systematically evaluated.
- Based on the results of the J-AXEL trial (J Thorac Oncol 2021;16:1523–1532.), nab-paclitaxel represents an important treatment option for patients with previously treated advanced or recurrent NSCLC.

## METHODS

- Objective**
  - Investigate the efficacy of nab-paclitaxel according to prior exposure to other taxanes (docetaxel or paclitaxel)
  - Explore potential cross-resistance among taxanes in patients with advanced or recurrent NSCLC.
- Patients**
  - Study period: February 2013 to August 2021
  - Patients with advanced or recurrent NSCLC and an ECOG performance status of 0–2 who received nab-paclitaxel monotherapy as second-line or later treatment at Nippon Medical School Hospital
- Methods**
  - Patient characteristics and treatment outcomes were retrospectively collected from medical records and analyzed.
- Endpoints**
  - Primary endpoint: Objective response rates (ORR) by prior taxane exposure
  - Secondary endpoints: Disease control rate (DCR), Progression-free survival (PFS), Exploratory analysis of factors associated with objective response (CR or PR), Grade 3 or higher adverse events
  - Exploratory analyses: Efficacy according to prior immune checkpoint inhibitor (ICI) exposure

## RESULTS

- Among 295 patients treated with nab-paclitaxel, 77 met the eligibility criteria, including 23 with prior taxane exposure and 54 without.
- Patient numbers differ from those in the abstract because some of the eligibility criteria were revised after abstract submission.

### Patients Characteristics (n=77)

|                                                    | Prior taxane (+)<br>(n=23) | Prior taxane (–)<br>(n=54) |
|----------------------------------------------------|----------------------------|----------------------------|
| Age<br>median (range)                              | 65 (43-78)                 | 67 (44-83)                 |
| Sex<br>Male/Female                                 | 16/7                       | 36/18                      |
| ECOG PS<br>0/1/2                                   | 5/17/1                     | 12/34/8                    |
| Histology<br>ad/sq/other                           | 15/7/1                     | 33/12/9                    |
| Stage (UICC 8 <sup>th</sup> )<br>IV/III/recurrence | 7/12/4                     | 11/34/9                    |
| Treatment Line<br>2/3/4-                           | 5/7/11                     | 35/14/5                    |
| Mutation<br>EGFR/ALK                               | 3/0                        | 12/2                       |

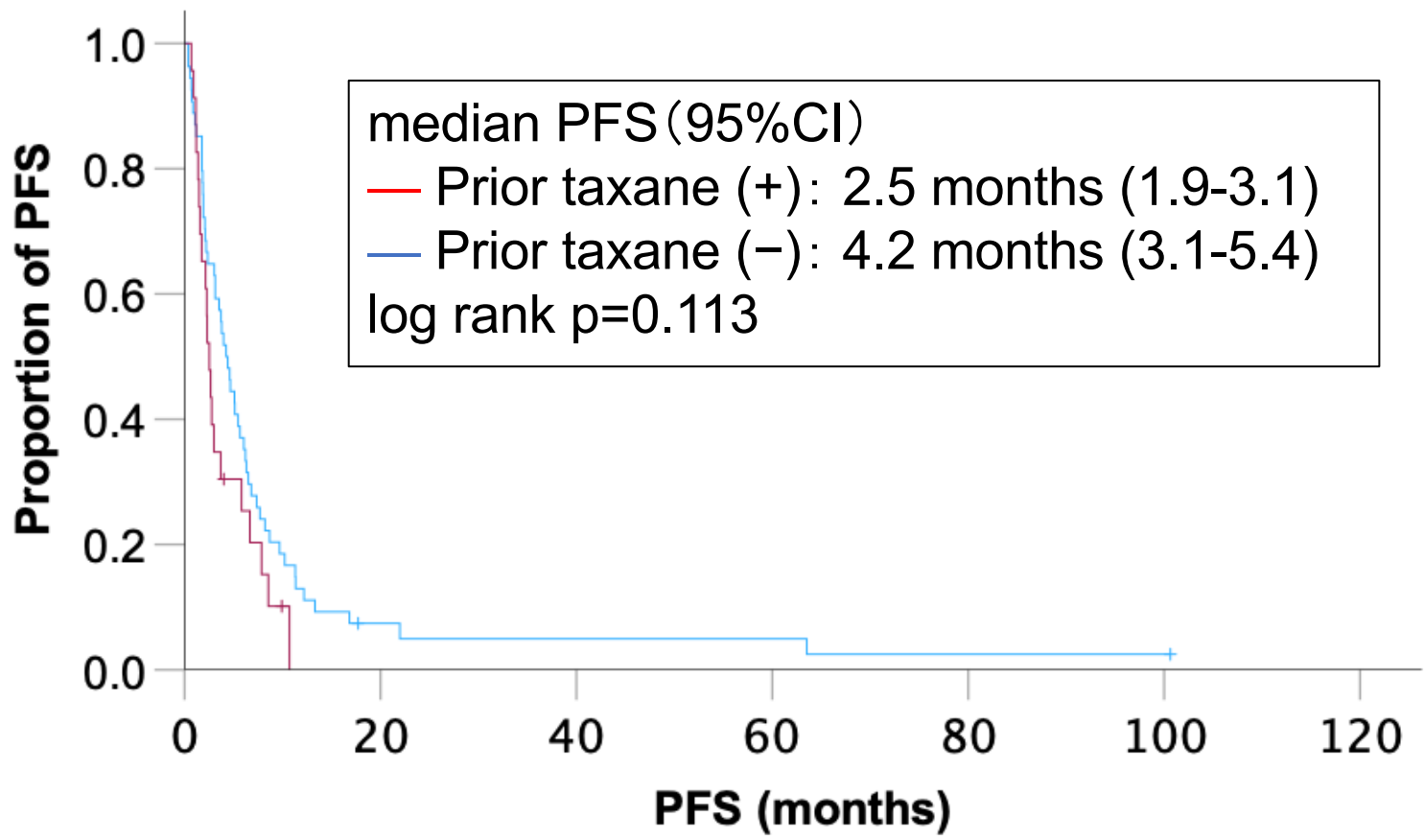
### ORR, DCR

ORR by IRC According to RECIST v1.1

|          | Prior taxane (+)<br>(n=23) | Prior taxane (–)<br>(n=54) |
|----------|----------------------------|----------------------------|
| Response |                            |                            |
| CR       | 0                          | 0                          |
| PR       | 3                          | 11                         |
| SD       | 7                          | 25                         |
| PD       | 10                         | 15                         |
| NE       | 3                          | 3                          |
| ORR (%)  | 15.0                       | 20.3                       |
| DCR (%)  | 50.0                       | 66.7                       |

## PFS

IBM SPSS Statistics 32



Median PFS did not statistically significantly differ between the groups (log-rank p = 0.113).

## Multivariable analysis

Factors associated with objective response (CR + PR) to nab-paclitaxel

| Variable                          | Univariable analysis*<br>(p-value) | Multivariable analysis ** |           |         |
|-----------------------------------|------------------------------------|---------------------------|-----------|---------|
|                                   |                                    | Odds ratio                | 95% CI    | p-value |
| ECOG PS (2 vs 0–1)                | 0.65                               | 0.79                      | 0.14-4.53 | 0.79    |
| Treatment line (≥3rd vs 2nd)      | 1.00                               | 0.76                      | 0.21-2.68 | 0.66    |
| Prior taxane exposure (Yes vs No) | 0.74                               | 1.72                      | 0.38-7.87 | 0.48    |

No factor was significantly associated with objective response in the exploratory multivariable analysis.

\* Fisher’s exact test  
\*\* Logistic regression analysis

## Safety

No grade ≥3 febrile neutropenia or peripheral neuropathy was observed in either group. Interstitial lung disease occurred in only one patient in the taxane-naïve group (1/54, 1.8%).

## CONCLUSIONS

- ✓ Among the 77 patients who received nab-paclitaxel monotherapy for NSCLC at our institution, 23 had previously received another taxane (docetaxel and/or paclitaxel; prior-taxane group).
- ✓ In the prior-taxane group (n=23), the objective response rate (ORR) and disease control rate (DCR) with nab-paclitaxel were 15.0% and 50.0%, respectively, compared with 20.3% and 66.7% in the no-prior-taxane group (n=54).
- ✓ The incidence of grade ≥3 adverse events was not higher in the prior-taxane group than in the no-prior-taxane group.

## DISCUSSION

- ✓ In this study, prior exposure to other taxanes appeared to confer some degree of cross-resistance to nab-paclitaxel in terms of ORR and PFS; however, its impact was limited.
- ✓ These findings suggest that cross-resistance among taxanes may be incomplete. Further studies with larger patient cohorts are warranted.
- ✓ Nab-paclitaxel may therefore remain a treatment option even for patients previously treated with other taxanes.

## DISCLOSURES

- AI Use: ChatGPT (OpenAI) was used to assist with English translation, language editing, and poster formatting. All scientific content, statistical analyses, data interpretation, and conclusions were independently developed, reviewed, and verified by the authors.
- Conflict of Interest: The authors have no conflicts of interest to disclose.

Shinji Nakamichi, M.D., Ph.D., and Kaoru Kubota, M.D., Ph.D.  
Department of Pulmonary Medicine and Oncology, Graduate School of Medicine, Nippon Medical School  
E-mail: snakamichi@nms.ac.jp and kkubota@nms.ac.jp