Patient Medication Preferences in Follicular Lymphoma in the United States: A Discrete Choice Experiment

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INTRODUCTION

- Major advances in therapeutics have improved survival for patients with relapsed/refractory (R/R) follicular lymphoma (FL)[1–6]
- These treatments offer varied levels of efficacy, safety, and convenience, raising a need to understand patient preferences for different treatment attributes that influence their treatment preference
- A discrete choice experiment (DCE) is a research method used to understand how individuals make decisions based on their preferences for different treatment attributes. It quantifies preferences and trade-offs among treatment attributes by evaluating patients' choice behaviors. This method operates on the assumption that treatment options can be characterized by various attributes, and the extent of an individual's preference for a treatment depends on the levels of these attributes

Aim
- This patient survey using a DCE with quantitative questionnaires was conducted to assess patient preferences on FL treatment attributes among patients with R/R FL in the US and quantify the importance of different treatment attributes that impact their treatment decisions

METHODS

Data Source and Study Population
- A web-based patient preference survey with a DCE design was conducted from April 7 to May 28, 2024, among US adults (≥18 years old) diagnosed with R/R FL, recruited through online patient panels, physician referrals, and support groups

Study Design
- The DCE survey was designed to assess patients' preferences for different treatment options for R/R FL, in accordance with the recommendations of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Good Research Practices for Conjoint Analysis Task Force[7,8]
- R/R FL treatment attributes were selected for inclusion in the DCE based on targeted literature review and clinical inputs (Table 1)
- The impact of adverse events (AEs) on QoL was defined as the extent to which AEs caused interruptions in patients' ability to engage in their usual day-to-day activities
- In the DCE survey, R/R FL patients were presented with a series of 11 choice questions (shown as choice cards). Patients were asked to choose their preferred treatment option between two hypothetical treatment profiles (Treatment A and Treatment B) with varying combination of levels associated with each attribute in each choice card (Figure 1)

Table 1. Attributes and Levels

Type of Attributes	Attributes	Levels
Efficacy	Prevention of disease progression	2 years 3 years 4 years
Safety	Impact of rash on quality of life	None or mild Moderate Significant
	Impact of cytokine release syndrome on quality of life	None or mild Moderate Significant
	Impact of neurological events on quality of life	None or mild Moderate Significant
Convenience	Mode of administration	Oral tablet Oral tablet and IV infusions (outpatient only) IV infusions (outpatient only) + optional monitoring (outpatient or inpatient) for first doses Blood collection (apheresis) and IV infusion + required monitoring (outpatient or inpatient) for first weeks
	Treatment duration	Continuous 3 months 6 months 12 months
	Time needed to travel to get access to medication	Less than 30 minutes 1 hour More than 2 hours

IV, intravenous.

RESULTS (left column continues)

Figure 1: Example of a Choice Question

Treatment attributes	Treatment A	Treatment B
The treatment can prevent disease progression for...	2 years	4 years
Impact of rash on quality of life	Moderate	None or mild
Impact of cytokine release syndrome on quality of life	Significant	Moderate
Impact of neurological events on quality of life	None or mild	Significant
Mode of administration	Oral tablet and IV infusions (outpatient only)	IV infusions (outpatient only) + optional monitoring (outpatient or inpatient) for first doses
Treatment duration	12 months	3 months
Time needed to travel to get access to medication	Less than 30 minutes	1 hour
Which treatment do you prefer?	◯	◯

When a patient hovered over or clicked on an attribute (underlined in the figure), the description of the attribute was shown in a pop-up window.
IV, intravenous.

- In addition to DCE questions, the survey also included questions related to patient sociodemographic and clinical characteristics, and the importance of efficacy measures
- Efficacy measures related to pausing disease progression, increasing life expectancy and increasing the chance of remission or cure were further explored using rating questions on a scale of 0 to 10, with 0 indicating "not at all important" and 10 indicating "extremely important"

Statistical Analysis
- Continuous variables were reported using means, medians, and standard deviations; categorical variables were reported using frequency counts and percentages
- Participants' preference data collected from the DCE were analyzed using a conditional logistic regression model. Coefficients were used to calculate the relative importance of each attribute, as well as patient willingness to trade off specified R/R FL treatment attributes

RESULTS

Patient Characteristics
- A total of 100 patients with R/R FL completed the survey (mean age: 61 years; 51% White or Caucasian; 58% male; 90% in suburban/urban residence) (Table 2)

Table 2. Summary of Patient Demographic Characteristics

	Patients (N=100)
Age, mean ± SD [median]	60.8 ± 6.5 [61.0]
Gender,[a] n (%)	
Male	58 (58.0)
Female	40 (40.0)
Race,[a,b] n (%)	
White or Caucasian	51 (51.0)
Black or African American	16 (16.0)
American Indian or Alaska Native	5 (5.0)
Asian or Pacific Islander	2 (2.0)
Ethnicity,[a] n (%)	
Not Hispanic or Latino	46 (46.0)
Hispanic or Latino	32 (32.0)
Region of residence, n (%)	
West	48 (48.0)
South	27 (27.0)
Northeast	13 (13.0)
Midwest	12 (12.0)
Residence area, n (%)	
Suburban or urban	90 (90.0)
Rural	10 (10.0)
Employment,[a] n (%)	
Retired	39 (39.0)
Full-time, part-time, self-employed	21 (21.0)
Unemployed	14 (14.0)
Other[c]	20 (20.0)
Insurance coverage,[b] n (%)	
Commercial/private insurance	76 (76.0)
Public insurance	29 (29.0)

[a] Response categories do not add up to 100% because the proportion of patients who selected "Prefer not to answer" is not presented in the table.
[b] Response categories were not mutually exclusive.
[c] Other category includes homemaker, on disability, and student.
SD, standard deviation.

RESULTS (middle-right column)

- Thirty-six percent of patients were diagnosed 2–5 years ago, with 28% diagnosed ≥5 years ago. Eighteen percent of patients received second-line therapy, while 82% received ≥3 lines of therapy (Table 3)
- All patients reported having experienced ≥1 AE from treatment, with the most common AEs being fatigue (97%), diarrhea (53%), nausea and/or vomiting (46%) and headache (45%)

### Table 3. Summary of Patient Clinical Characteristics

	Patients (N=100)
Time since diagnosis, n (%)	
Less than a year ago	9 (9.0)
1 to <2 years ago	27 (27.0)
2 to <5 years ago	36 (36.0)
5 or more years ago	28 (28.0)
Line of treatment, n (%)	
Second line	18 (18.0)
Third line and above	82 (82.0)
Side effects,[a] n (%)	
Experienced ≥1 side effects	100 (100.0)

[a] Categories were not mutually exclusive.

Patient Preference from DCE Results
- The top 3 treatment attributes with the highest relative importance to patients were PFS (27%), impact of CRS on QoL (20%), and mode of administration (16%); these were followed by impact of rash (15%) and neurological events (14%) on QoL, time needed to travel to get access to medication (5%) and treatment duration (4%) (Figure 2)
- Patients' primary considerations in importance of efficacy measures were to increase life expectancy (84%), increase the chance of remission or cure (74%), and pause the progression of cancer (47%), with corresponding average rating score of 9.7, 9.3, and 7.5 out of 10
- The DCE showed that patients preferred treatments with increased efficacy, less impact of AEs on QoL, and a more convenient mode of administration (P<.001). Treatment duration had the least impact on patients' preferences during treatment selection. (Figure 2)

Figure 2: Attributes' Relative Importance for Patients with R/R FL
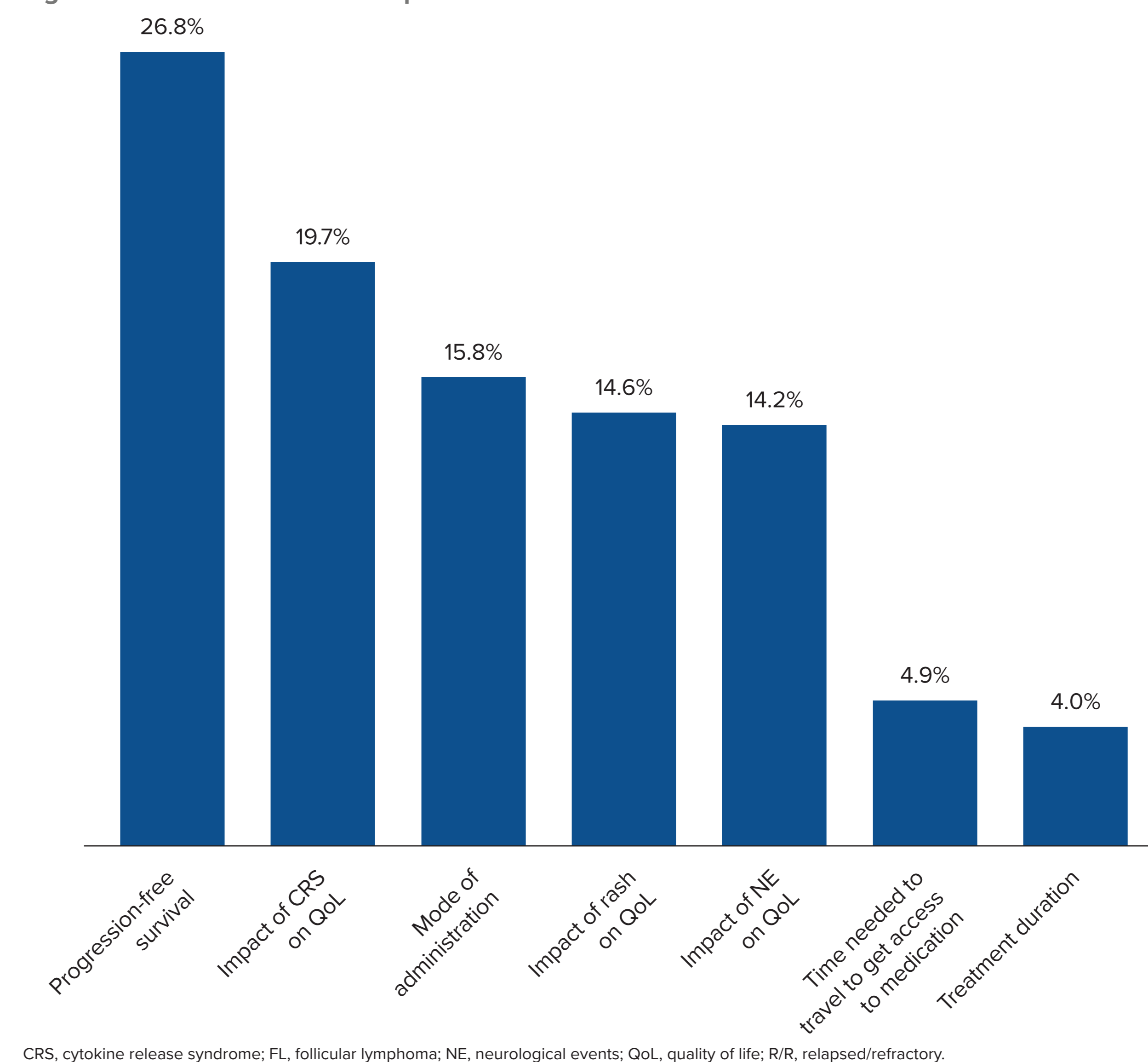
CRS, cytokine release syndrome; FL, follicular lymphoma; NE, neurological events; QoL, quality of life; R/R, relapsed/refractory.

- In terms of the preference for injection method, 46% and 16% of patients preferred subcutaneous (SC) injection and IV injection, respectively. The remaining 38% of participants were indifferent
- More than half of the survey respondents reported preference of travel less than 30 minutes to a hospital/cancer treatment center to receive treatment (55%) or refill prescriptions (68%)

CONCLUSIONS

- Shared decision-making in FL treatment selection should include an informed discussion about AEs as well as efficacy considerations and how these may affect patient QoL
- PFS was the most important treatment attribute for patients with R/R FL when making a treatment selection, followed by the impact of CRS on QoL and the mode of administration
- However, patients were willing to trade some level of efficacy to receive treatments with better safety and a more convenient mode of administration
- Treatment duration was the least important attribute and did not affect patient preferences
- Incorporating patient preferences in treatment decision-making may help improve treatment adherence and outcomes and should be evaluated in future studies

- On average, patients were willing to accept a reduction of 1.5 years of PFS to receive a treatment with less (none or mild vs significant) impact of CRS on QoL, and a reduction of 1.1 years of PFS to receive a treatment with less impact of rash or neurological events on QoL. In terms of mode of administration, patients were willing to trade 1.2 years of PFS to receive a treatment given as an oral tablet rather than one that requires apheresis and IV administration with monitoring, and to trade 0.9 years of PFS to avoid a treatment given intravenously with optional monitoring for first doses (Figure 3)

Figure 3. Willingness to Trade Off Years of PFS for Patients With R/R FL
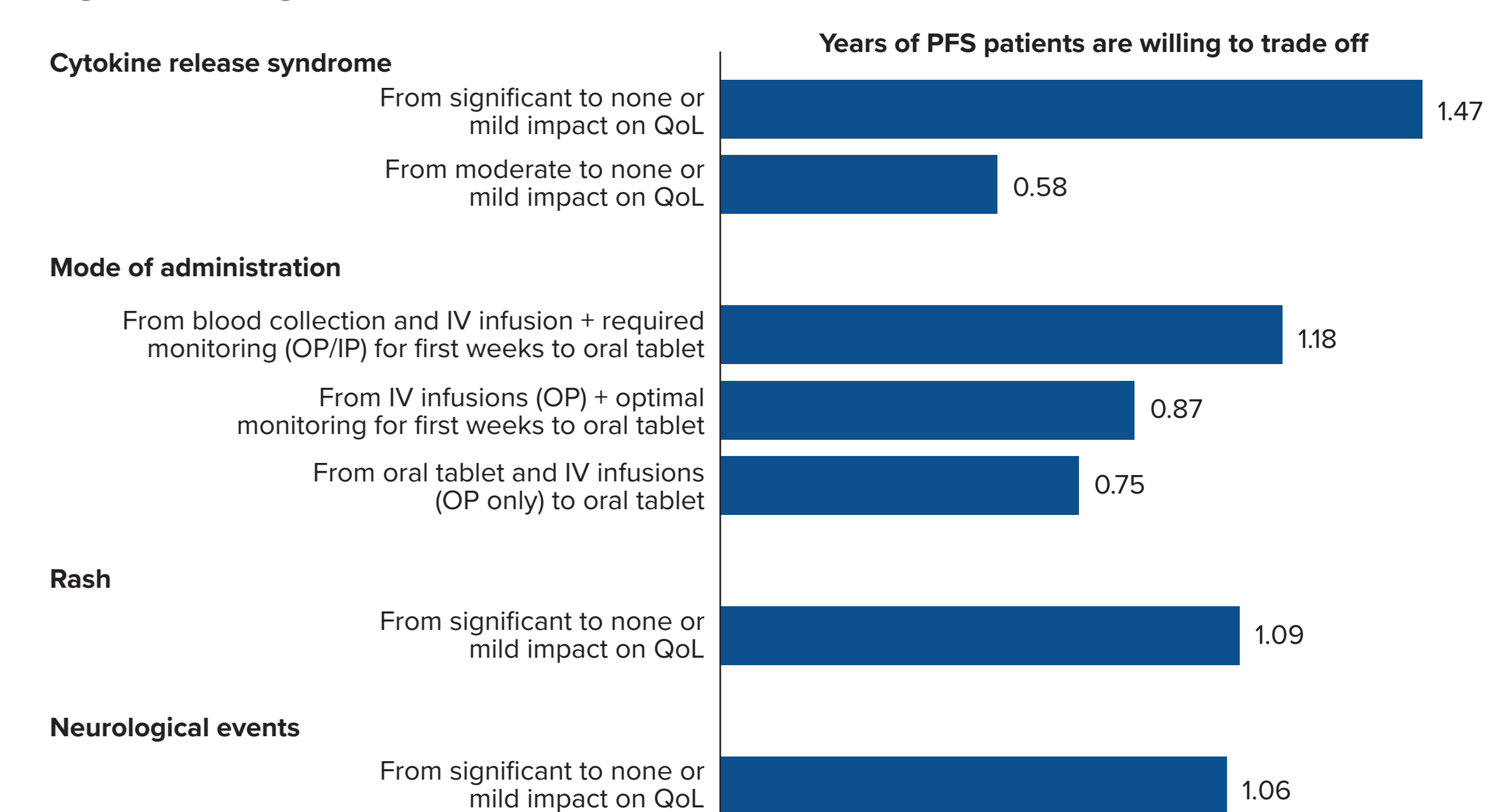
FL, follicular lymphoma; IP, inpatient; IV, intravenous; OP, outpatient; PFS, progression-free survival; QoL, quality of life; R/R, relapsed/refractory.

DISCUSSION

- Our study results indicated that the most important attributes in making a treatment decision for R/R FL were PFS, the impact of CRS on QoL, and the mode of administration. While participants emphasized the importance of treatment efficacy, they expressed a willingness to accept a reduction of 1.1 to 1.5 years of PFS in exchange for a treatment that had less impact from AEs, including CRS, neurological, or rash events on QoL
- Gaining a greater understanding of treatment preferences for patients with R/R FL, along with patients' willingness to trade off efficacy with safety and convenience attributes, has the potential to enhance shared decision-making between physicians and patients, and improve patient satisfaction and treatment adherence
- Future prospective studies are needed to evaluate the effects of shared decision-making on treatment adherence and outcomes within the R/R FL population to both better understand the impact on patient care and further inform clinical practice

Study Limitations
- R/R FL patient respondents in this DCE survey may not be representative of the broader general R/R FL population, potentially limiting generalizability of study results. Nonetheless, about 90% of the current sample was recruited via physician referrals nationwide
- To minimize participants' response burden, a limited number of R/R FL treatment attributes were included in the DCE questions; other attributes not assessed in the study could have an impact on patient preferences

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