

Safety and Survival Outcomes of Platinum-Based Chemotherapies in Non-Small Cell Lung Cancer: Insights from FDA FAERS Q4 2024 Data

Xinyi Zhang
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Introduction:

This report uses the U.S Food & Drug Administration (FDA) Adverse Event Reporting System (FAERS) to analyze the safety and survival outcomes of platinum-based chemotherapies in Non-Small Cell Lung Cancer (NSCLC) in Q4 2024. The most commonly applied platinum-based chemotherapies are Carboplatin and Cisplatin. In total, there are 221 patients having NSCLC received these two platinum-based chemotherapies.

Dataset:

FDA FARES October-December 2024

Methods:

Survival Analysis was conducted for death, hospitalization, and life-threatening outcomes for the overall cohort. Analysis is not done by stratifying the drug type is because Cisplatin does not have sufficient outcome numbers. All analyses were performed in SAS9.4.

Results:

Table-1

	Drug Name			P-value
	Carboplatin (N=216)	Cisplatin (N=5)	Total (N=221)	
Age				
N (Missing)	194 (22)	5 (0)	199 (22)	
Mean (SD)	66.2 (9.18)	64.0 (11.38)	66.2 (9.22)	
Median (Range)	67.0 (46.0, 87.0)	70.0 (48.0, 73.0)	67.0 (46.0, 87.0)	
Sex, n (%)				
Female	105 (48.6%)	0 (0.0%)	105 (47.5%)	
Male	111 (51.4%)	5 (100.0%)	116 (52.5%)	
Weight				
N (Missing)	96 (120)	3 (2)	99 (122)	
Mean (SD)	73.0 (16.60)	78.7 (11.55)	73.2 (16.45)	
Median (Range)	71.0 (41.0, 115.0)	72.0 (72.0, 92.0)	71.9 (41.0, 115.0)	
Outcome, n (%)				
Death	26 (12.0%)	1 (20.0%)	27 (12.2%)	
Hospitalization	101 (46.8%)	2 (40.0%)	103 (46.6%)	
Life-Threatening	12 (5.6%)	0 (0.0%)	12 (5.4%)	
Other Serious Medical Event	77 (35.6%)	2 (40.0%)	79 (35.7%)	

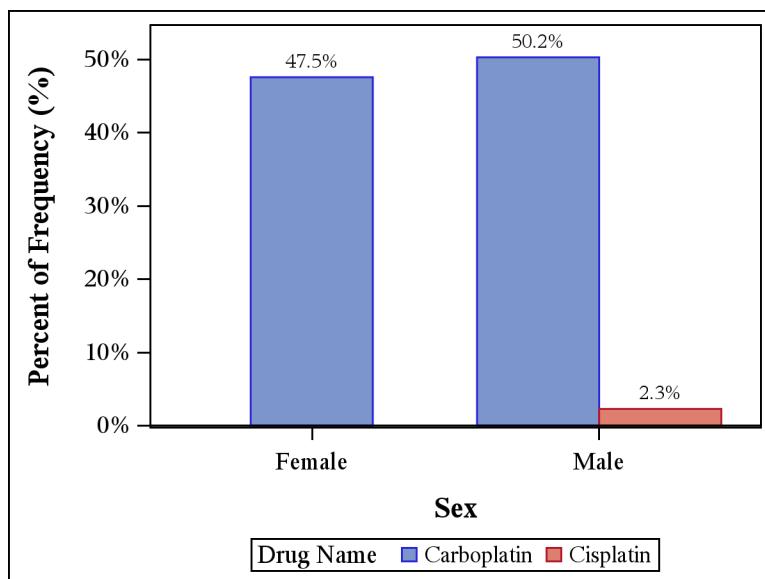


Figure 1: Platinum-Based Chemotherapies by Sex

100% of female patients took Carboplatin while 95.69% of males took Carboplatin. The remaining 4.31% of male patients took Cisplatin.

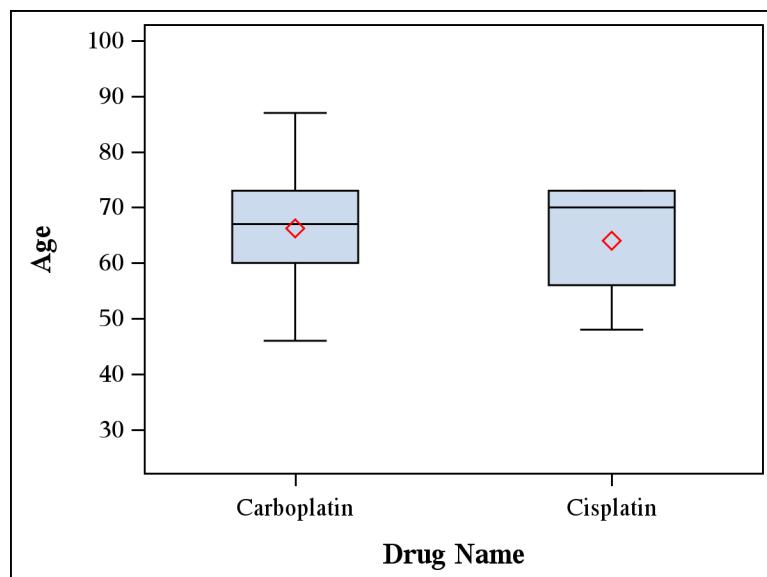


Figure 2: Distribution of Age in Different Platinum-Base Chemotherapies

Mean age of the patients taking Carboplatin is around $66.2(\pm 9.2)$ years old while the value is around $64.0(\pm 11.4)$ for Cisplatin.

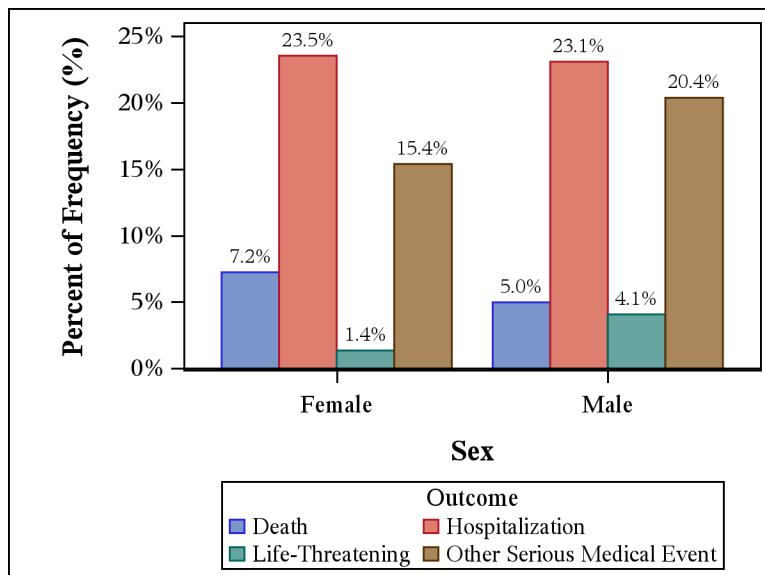


Figure 3: Outcome Experienced by Different Sex

The most common outcome that both genders experienced is Hospitalization (49.52% among females, 43.97% among males), while Life-Threatening event was the least experienced event (2.86% among females, 7.76% among males).

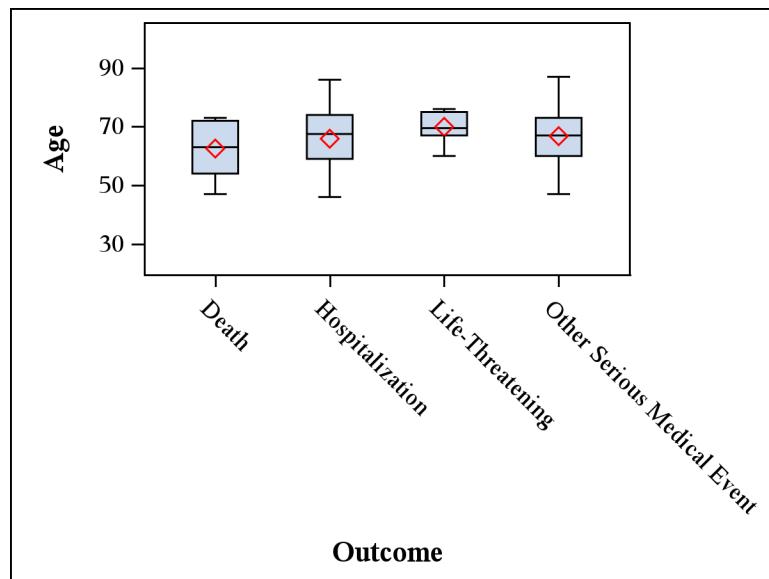


Figure 4: Distribution of Age group for Different Outcomes

Mean age of the patients experienced death is $62.5(\pm 9.6)$, $65.9(\pm 10.0)$ for hospitalization, $69.9(\pm 4.8)$ for life-threatening outcomes, and $66.8(\pm 8.4)$ for other serious medical events.

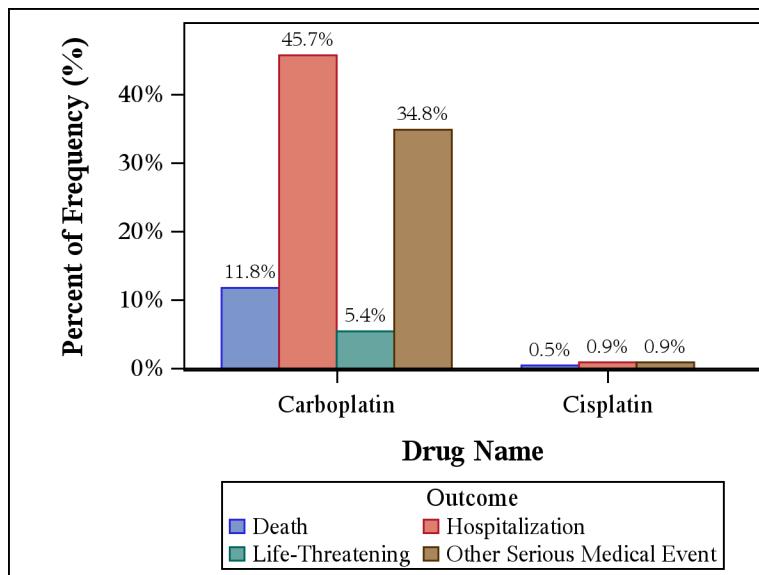


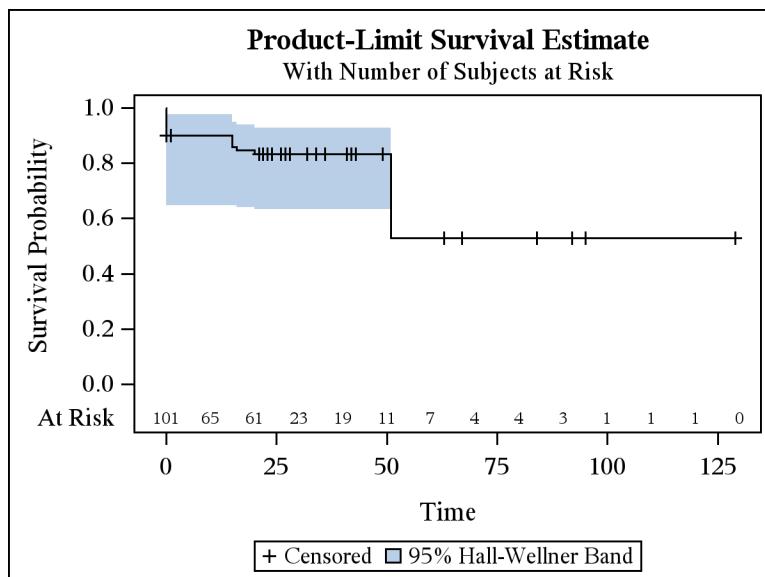
Figure 5: Outcome Associated with Different Platinum-Based Chemotherapies

The most common outcome that both chemotherapies were associated with is Hospitalization (46.76% in Carboplatin, 40% in Cisplatin), while Life-Threatening event was the least experienced event associated with both chemotherapies(5.56% in Carboplatin, 0% in Cisplatin).

Since the Cisplatin group does not have sufficient outcomes, only the entire cohort will be analyzed.

Death Outcome

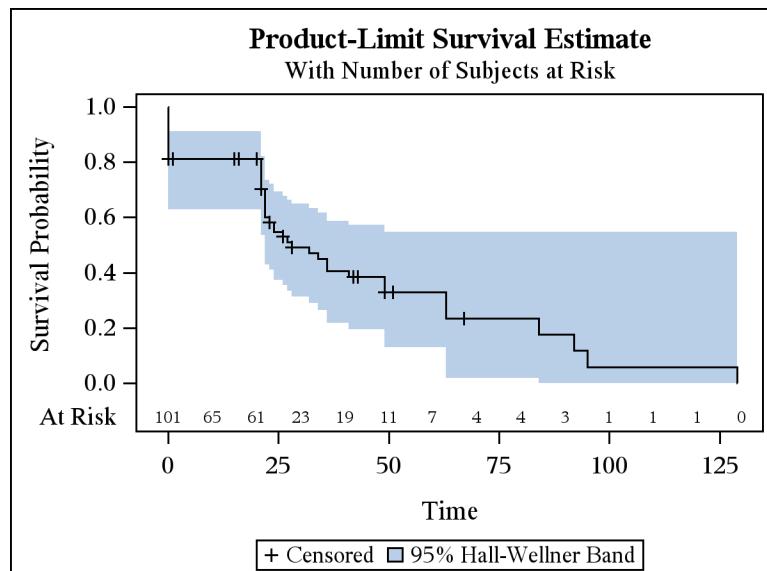
The LIFETEST Procedure



The Kaplan-Meier estimate shows that most patients survived throughout follow-up, with only a small proportion of deaths. Survival remained high (~80 %) for much of the study and dropped to ~60 % by the end. The majority of observations were censored, indicating the data are dominated by survivors rather than deaths.

Hospitalization Outcome

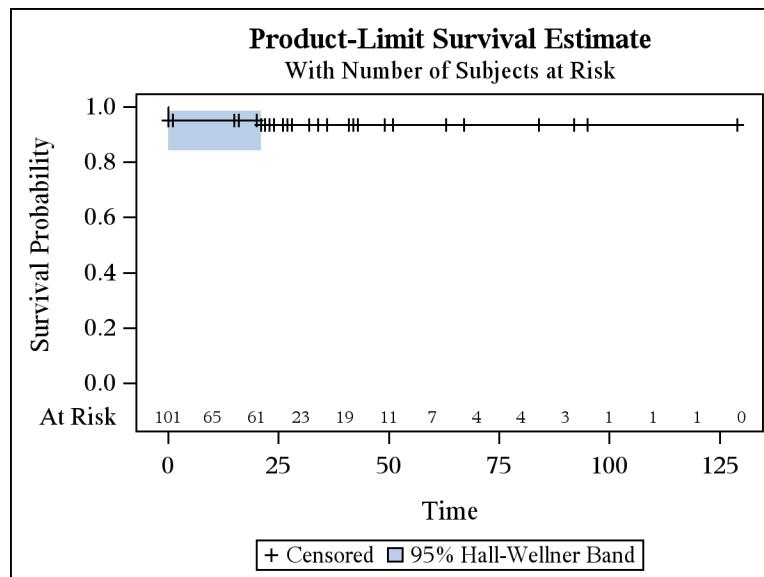
The LIFETEST Procedure



The analysis indicates that hospitalizations occurred relatively early: about 50% of subjects were hospitalized by roughly 20–25 days post therapy start date, and nearly 80–90% experienced hospitalization by the end of the observation period. Only a small minority remained hospitalization-free after 100 days.

Life Threatening Outcome

The LIFETEST Procedure



The analysis suggests that life-threatening events were extremely rare during the study period. Survival probability remained above 95 % throughout follow-up, with nearly all participants avoiding a life-threatening outcome. The narrow confidence band confirms strong reliability of this conclusion.

Conclusion:

These results suggest that while many patients required hospitalization, progression to critical or fatal outcomes was uncommon. The overall safety and survival profile appears favorable, though early monitoring for hospitalization risk may be warranted. The censored data imply ongoing follow-up is essential to confirm long-term safety trends.