PS-002.

The importance of pharmacovigilance for maintaining hospital protocols including highly complex drugs: Our own EGFR-TKI affair.

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Background

Two reversible tyrosine-kinase inhibitors of the epidermal growth factor receptor (EGFR-TKI) (A and B) were approved for the treatment of EGFR-mutant advanced non-small cell lung cancer (NSCLC), with similar activity and results. Surveillance detected effectiveness differences between A and B in our center.

Purpose

The present study was promoted to define and eventually correct the cause of this unusual difference in effectiveness between A and B.

Methods

A was considered our standard treatment for EGFR-mutant NSCLC from April-2011 to March-2013, and was replaced with B from April-2013 to nowadays. EGFR-mutant patients were sequentially diagnosed in two different external platforms (PA and PB, respectively) during the same periods of time. We retrospectively reviewed the medical charts of TKI-treated *EGFR*-mutant NSCLC from April-2011 to March-2014. Progression free survival (PFS) was analyzed in any, first, and second line of therapy by Kaplan-Meier curves and Cox regression. The finding of significant differences in PFS between A and B led to the retrospective review of all *EGFR*-analyzed NSCLC.

Results

Fifteen *EGFR*-mutant NSCLC were treated with A (7 second line), and 16 with B (10 second line). Mean age of the series was 65 year-old (44-82), and 74.2% were women. PFS benefited A in any (11.43 vs. 4.96 months; p= 0.000), first (13.3 vs. 3.98 months; p= 0.014), and second line of treatment (9.5 vs. 5.53 months; p= 0.023). PA analysed 108 NSCLC: 12.1% and 15% of samples were *EGFR*-mutant and unfit for diagnosis, respectively. PB analysed 85 NSCLC: 20% and 3.5% of samples were *EGFR*-mutant and unfit for diagnosis, respectively.

Conclusion

The lower PFS of B-treated NSCLC was attributed to an excessive sensibility of PB to detect *EGFR*-mutation. Re-calibration of the technique modified the current percentage of EGFR-mutant and unfit samples to 15.5% and 10% of 129, respectively. Periodic surveillance of patients receiving highly complex drugs helps to improve the effectiveness of treatments, to correct protocol defects, and to reduce costs.

Table1. Epidemiology of the series.

		A	B
Gender	Female	73.33%	75%
	Male	26.66%	25%
Age	Mean	70 years-old	60 years-old
	Range	53-82 years	44-77 years
EGFR mutation	del19	73.33%	75%
	L858R	26.66%	18.75%
	Other		6.25%
Treatment line	First	60%	37.5%
	Second	40%	62.5%

Figure 1. PFS Kaplan-Meier curves according to TKI treatment.

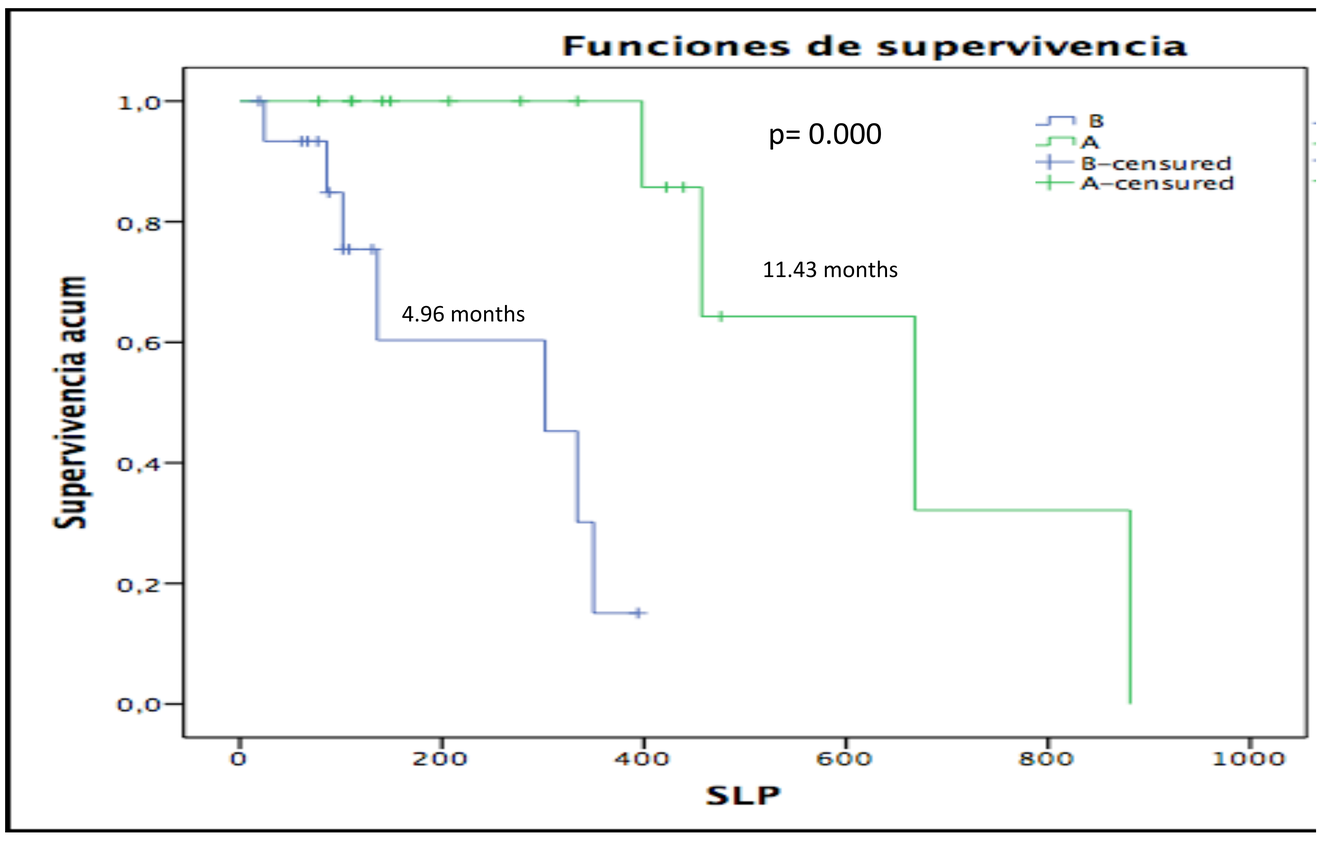

Figure 2. PFS according to TKI treatment.

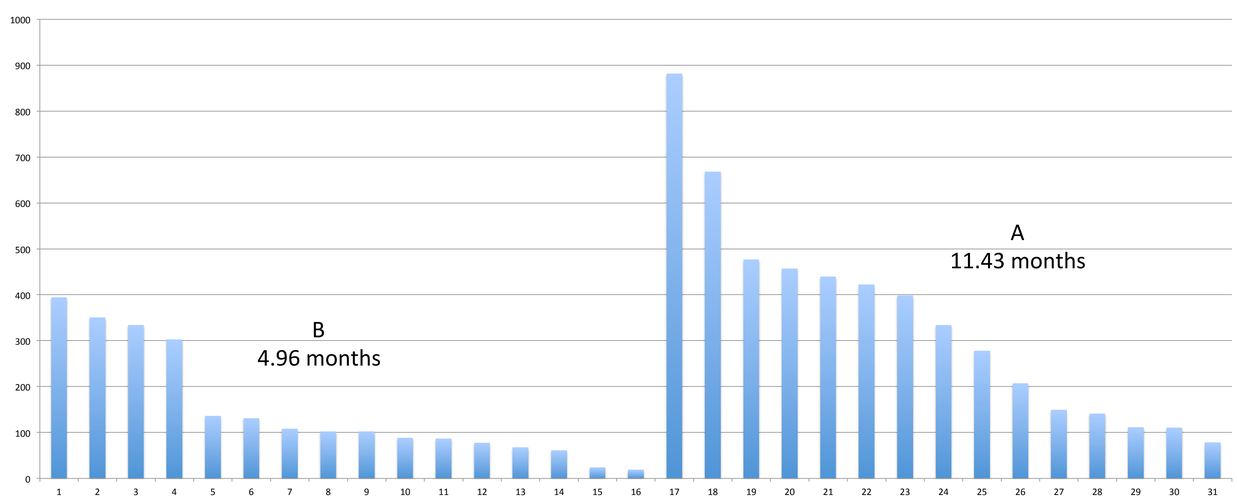

Figure 3. EGFR-mutant and unfit samples after reviewing PB sensibility.