

NIVOLUMAB IN LUNG CANCER: FROM WEIGHT-BASED TO FLAT DOSING

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Background & Objectives

- **Nivolumab:**
 - ✓ Monoclonal antibody targeting PD1, **immunotherapy**
 - ✓ Approved by the EMA in 2015
 - ✓ Indicated in many cancers, including **non-small cell lung cancer (NSCLC)**
- **Industrial development strategy:**
 - ✓ First, a **weight-based approach** with **3mg/kg every 2 weeks (Q2W)**
 - ✓ In **2018** simplification of the dosing regimen for a **flat dose of 240mg Q2W**, regarding studies which assess effectiveness and safety (1–3)
 - ✓ But one of these studies → non-statistically **trend in more serious side effects (SSE) in low body-weight patients (LBW, <50kg)**(2)
- **Aim of the study:** to **review the new dosing regimen** and to **evaluate** if it would represent significant **financial changes** for our hospital regarding the patients' cohort.

Material & Methods

- **Retrospective record** of anthropometric and clinical data from all the patients treated by nivolumab for NSCLC in our center between January 2017 and June 2018
- **Evaluation of the cost per milligram** of nivolumab (thanks to national reimbursement data).
- **Calculation of the cost for three treatment strategies:**
 - ✓ **3mg/kg Q2W**
 - ✓ **240mg flat dose Q2W** (as if new dosing strategy was applied all along the treatment)
 - ✓ **240mg flat dose Q2W except for patients under 50kg** (mixed strategy, 3mg/kg Q2W dosing regimen, taking into account the trend in more SSE in LBW patients) (2).

Results

- Total of **49 patients** included in the study

Table 1: Patients characteristics

Patients	n = 49
Lost patients	8
Deaths	6
Sex ratio (M/F)	3.08
Patients < 50 kg (%)	6 (12.2 %)
Mean age ± standard deviation (years)	67 ± 9
Mean height ± standard deviation (cm)	170 ± 9
Mean weight ± standard deviation (kg)	69.4 ± 19.2
Mean body area ± standard deviation (m ²)	1.8 ± 0.26
Average number of cures (min-max)	13 (1 - 63)

- Nivolumab **average cost per milligram** in our country **10.57€**

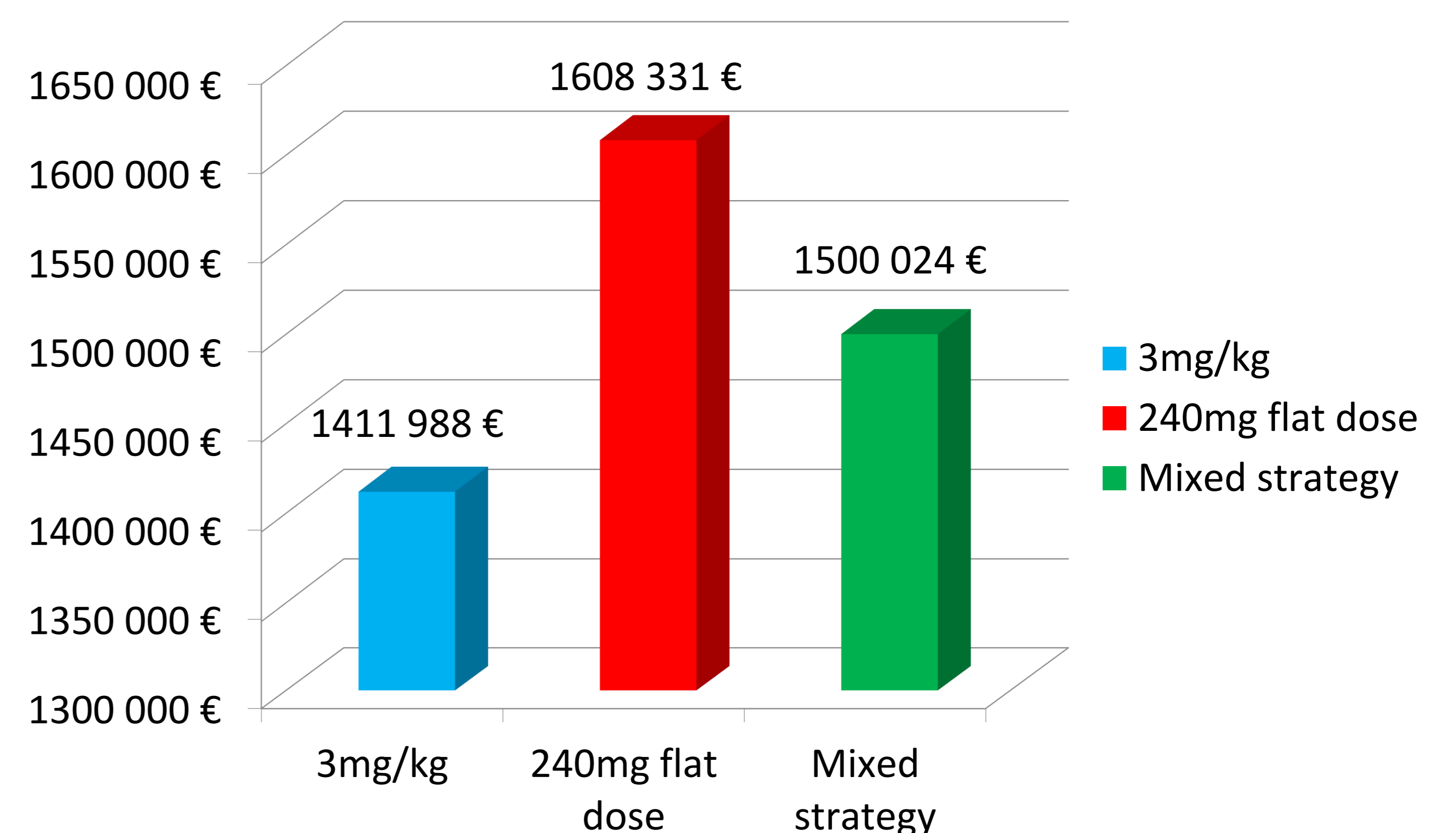


Figure 1: Cost comparison according to each dosing strategy

- Compared to the 3mg/kg strategy:
 - ✓ **240mg flat dose strategy is 14% more expensive**
 - ✓ **Mixed strategy** taking into account low body-weight patients is **8.4% more expensive**

Discussion & Conclusions

- **Nivolumab flat dose:**
 - ✓ **Practical benefits** in terms of prescription and preparation
 - ✓ **Extra-cost** regarding our patients' population in NSCLC
- **Prescription** should be **wise in LBW patients**, waiting the results of clinical trials
- **Flat dose strategies** for monoclonal antibodies in oncology are a **challenge** but also a **paradox** in the era of **personalized medicine**

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