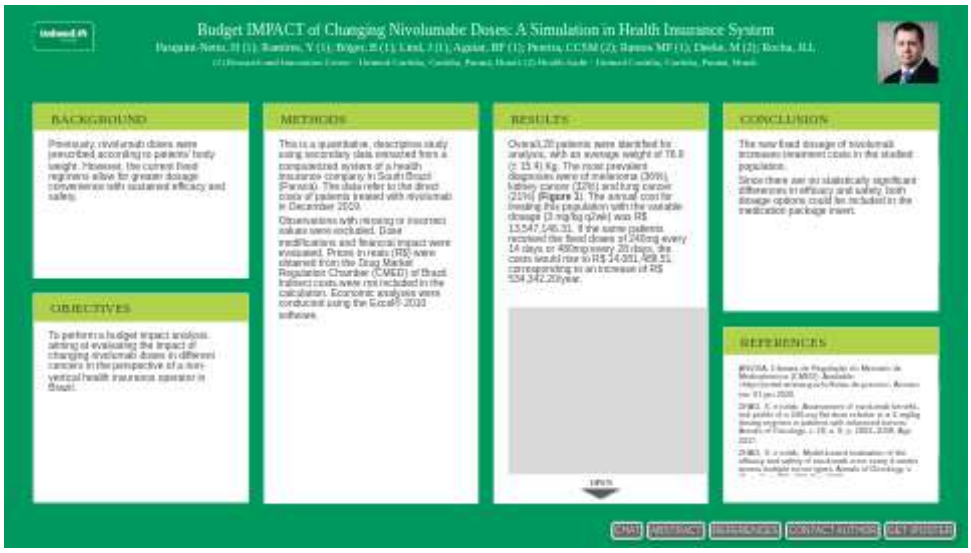
Budget IMPACT of Changing Nivolumabe Doses: A Simulation in Health Insurance System



Pasquini-Netto, H (1); Ramires, Y (1); Böger, B (1); Lind, J (1); Aguiar, BF (1); Pereira, CCSM (2); Ramos MP (1); Deeke, M (2); Rocha, JLL

(1) Research and Innovation Center - Unimed Curitiba, Curitiba, Paraná, Brazil. (2) Health Audit - Unimed Curitiba, Curitiba, Paraná, Brazil.









PRESENTED AT:

BACKGROUND

Previously, nivolumab doses were prescribed according to patients' body weight. However, the current fixed regimens allow for greater dosage convenience with sustained efficacy and safety.

OBJECTIVES

To perform a budget impact analysis aiming at evaluating the impact of changing nivolumab doses in different cancers in the perspective of a non-vertical health insurance operator in Brazil.

METHODS

This is a quantitative, descriptive study using secondary data extracted from a computerized system of a health insurance company in South Brazil (Paraná). The data refer to the direct costs of patients treated with nivolumab in December 2019.

Observations with missing or incorrect values were excluded. Dose modifications and financial impact were evaluated. Prices in reais (R$) were obtained from the Drug Market Regulation Chamber (CMED) of Brazil. Indirect costs were not included in the calculation. Economic analyses were conducted using the Excel® 2010 software.

RESULTS

Overall,28 patients were identified for analysis, with an average weight of 76.9 (± 15.4) Kg. The most prevalent diagnoses were of melanoma (36%), kidney cancer (32%) and lung cancer (21%) (**Figure 1**). The annual cost for treating this population with the variable dosage (3 mg/kg q2wk) was R$ 13,547,146.31. If the same patients received the fixed doses of 240mg every 14 days or 480mg every 28 days, the costs would rise to R$ 14,081,488.51, corresponding to an increase of R$ 534,342.20/year.

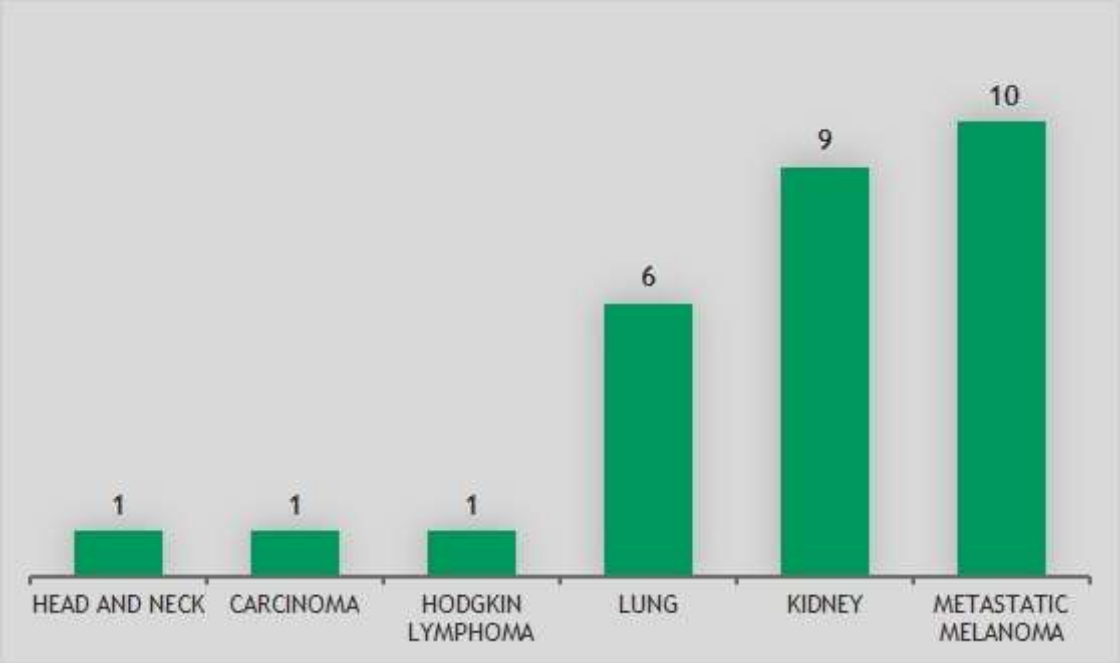


Figure 1. Distribuition of cancer types in patientes using nivolumab in 2019.

Patients weighing <80kg show a growth in the fixed doses treatment expenses, while patients weighing ≥80kg lead to avoided costs to the source of payment (**Figure 2**).

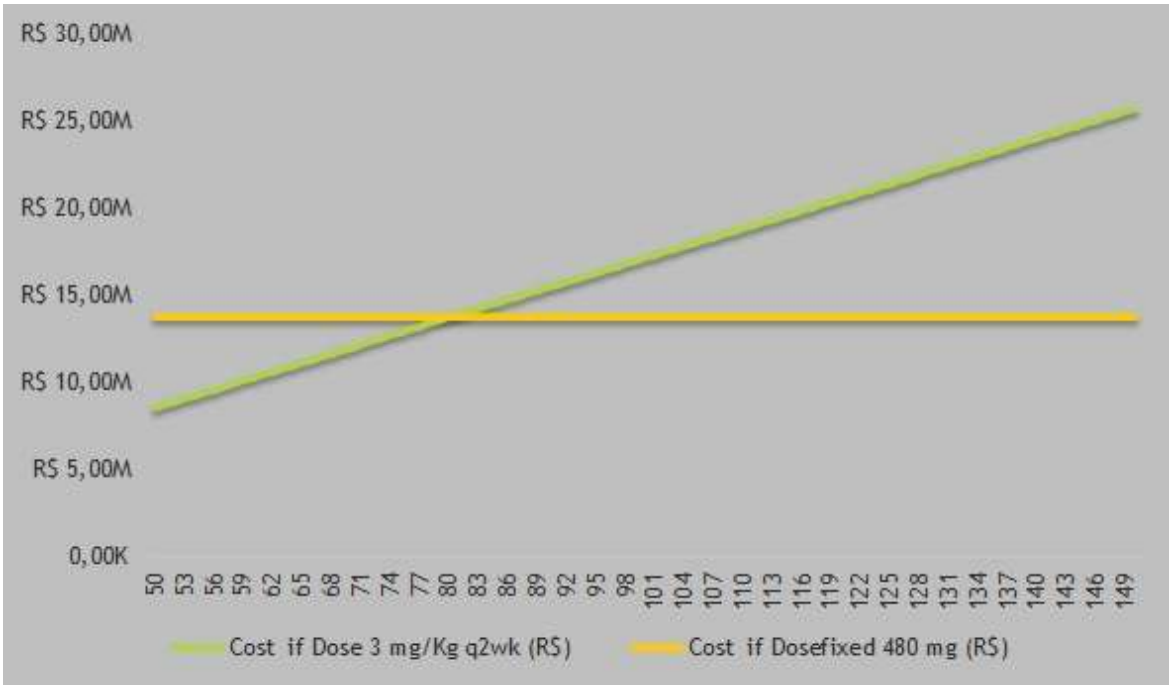


Figure 2. Annual costs of nivolumab doses *vs* patient weight (N=28).

CONCLUSION

The new fixed dosage of nivolumab increases treatment costs in the studied population.

Since there are no statistically significant differences in efficacy and safety, both dosage options could be included in the medication package insert.

REFERENCES

ANVISA. Câmara de Regulação do Mercado de Medicamentos (CMED). Avaliable: <http://portal.anvisa.gov.br/listas-de-precos>. Acesso em: 01 jan 2020.

ZHAO, X. e colab. Assessment of nivolumab benefit-risk profile of a 240-mg flat dose relative to a 3-mg/kg dosing regimen in patients with advanced tumors. Annals of Oncology, v. 28, n. 8, p. 2002–2008, Ago 2017.

ZHAO, X. e colab. Model-based evaluation of the efficacy and safety of nivolumab once every 4 weeks across multiple tumor types. Annals of Oncology, v. 31, n. 2, p. 302–309, Fev 2020.

ABSTRACT

BACKGROUND

Previously, nivolumab doses were prescribed according to patients' body weight. However, the current fixed regimens allow for greater dosage convenience with sustained efficacy and safety.

OBJETIVES

To perform a budget impact analysis aiming at evaluating the impact of changing nivolumab doses in different cancers in the perspective of a non-vertical health insurance operator in Brazil.

METHODS

This is a quantitative, descriptive study using secondary data extracted from a computerized system of a health insurance company in South Brazil (Paraná). The data refer to the direct costs of patients treated with nivolumab in December 2019.

Observations with missing or incorrect values were excluded. Dose modifications and financial impact were evaluated. Prices in reais (R$) were obtained from the Drug Market Regulation Chamber (CMED) of Brazil. Indirect costs were not included in the calculation. Economic analyses were conducted using the Excel® 2010 software.

RESULTS

Overall,28 patients were identified for analysis, with an average weight of 76.9 (± 15.4) Kg. The most prevalent diagnoses were of melanoma (36%), kidney cancer (32%) and lung cancer (21%) (**Figure 1**). The annual cost for treating this population with the variable dosage (3 mg/kg q2wk) was R$ 13,547,146.31. If the same patients received the fixed doses of 240mg every 14 days or 480mg every 28 days, the costs would rise to R$ 14,081,488.51, corresponding to an increase of R$ 534,342.20/year.
Patients weighing <80kg show a growth in the fixed doses treatment expenses, while patients weighing ≥80kg lead to avoided costs to the source of payment (**Figure 2)**.

CONCLUSION

The new fixed dosage of nivolumab increases treatment costs in the studied population. Since there are no statistically significant differences in efficacy and safety, both dosage options could be included in the medication package insert.

REFERENCES

ANVISA. Câmara de Regulação do Mercado de Medicamentos (CMED). Avaliable: <http://portal.anvisa.gov.br/listas-de-precos>. Acesso em: 01 jan 2020.

ZHAO, X. e colab. Assessment of nivolumab benefit-risk profile of a 240-mg flat dose relative to a 3-mg/kg dosing regimen in patients with advanced tumors. Annals of Oncology, v. 28, n. 8, p. 2002-2008, Ago 2017.

ZHAO, X. e colab. Model-based evaluation of the efficacy and safety of nivolumab once every 4 weeks across multiple tumor types. Annals of Oncology, v. 31, n. 2, p. 302-309, Fev 2020.