

The Cost and Revenue Situation of Intravenous Administration versus Subcutaneous Application of Herceptin and MabThera in Switzerland

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Introduction

In Switzerland, every year about 5'500 women are diagnosed with breast cancer and 1'500 people with non-Hodgkin's lymphoma [1]. The targeted therapy with MabThera® is the standard of care for many patients with Non-Hodgkin's lymphoma, whereas Herceptin® is approved for the treatment of a certain type of breast cancer. Currently both drugs are administered intravenously (IV), yet a subcutaneous application (SC) is in development.

Assuming the same price for the future subcutaneous formulation, this study compared the cost and revenue situation of both application forms. The analysis was performed both in hospital outpatient- and resident oncologists-settings in Switzerland.

Methods

A bottom-up approach was applied to analyze the cost and revenue situation from a hospital outpatient clinics and a resident oncologists perspective.

The treatment process for the intravenous and subcutaneous administration was analyzed by using cost and accounting data from ten health care providers (e.g. labour costs, lease costs, TARMED tariff numbers applied), information from official tariff systems (e.g. prices of drugs, medical devices and consumables) and literature. Based on this data four calculation models showing costs and revenues were established for each drug and type of health care provider setting. These calculation models were established for single administrations in both treatment phases (induction and maintenance phase) as well as for the entire therapy.

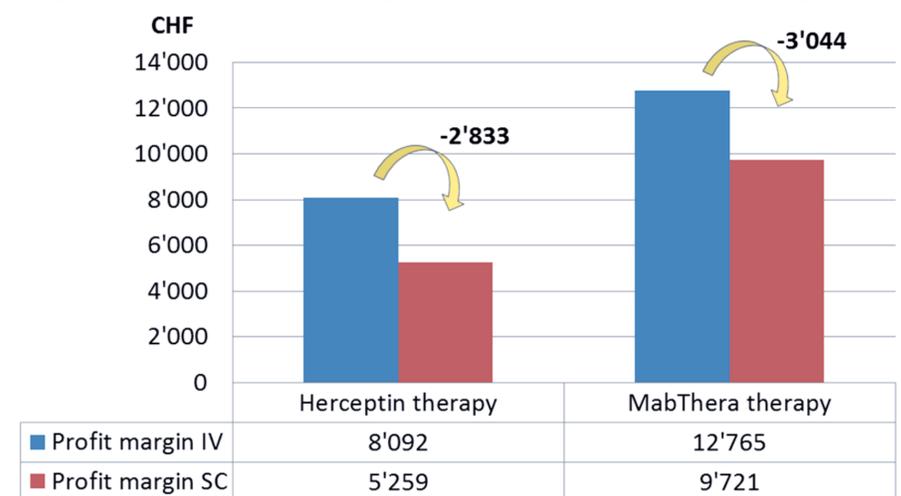
In a sensitivity analysis four scenarios were scrutinized, among others a 20% price reduction and a 10% discount on the drug prices of the subcutaneous application.

Results

The treatment time for the subcutaneous application, conducted by a nurse, lasts about 15 minutes, whereas an intravenous administration takes generally about 60 minutes for Herceptin and 90 minutes for MabThera. Thus, the subcutaneous application results in a time gain for patients and health care professionals as well as in an overall cost reduction for all reviewed settings.

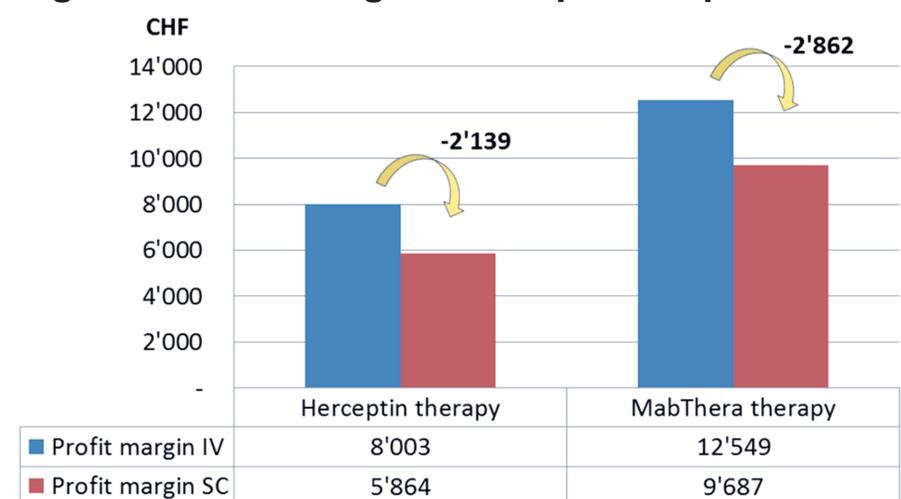
For resident oncologists the change results in a lower profit margin of CHF 2'833 per entire Herceptin therapy and CHF 3'044 per entire MabThera therapy (Figure 1).

Figure 1: Profit margin for resident oncologists



For hospital outpatient clinics the change results in a lower profit margin of CHF 2'139 per entire Herceptin therapy and CHF 2'862 per entire MabThera therapy (Figure 2).

Figure 2: Profit margin for hospital outpatient clinics



The sensitivity analysis showed that a price reduction of 20% and a 10% discount on drug prices of the subcutaneous application reduces the loss of profit margin to CHF 550 or could even lead to a profit of CHF 140 per entire therapy depending on the setting.

Conclusion

By reducing the treatment time for patients and health care professionals as well as the health care costs of each single therapy, the new application form is advantageous from a health economic perspective for the whole society. Yet, the change to the subcutaneous application results in a decrease in profit margin for the single drug therapy for both reviewed health care providers. It might be argued, however, that health care providers gain time to treat new/other patients thereby generating additional profit margin.

[1] The Swiss cancer league, 2012.