

Cost/effectiveness analysis and assessment of adverse events associated with the administration of the long-acting cabotegravir - rilpivirine association

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Background

Although the new injectable formulation cabotegravir –rilpivirine represents the latest innovative weapon for the treatment of HIV, further studies and data are needed to fully understand the effectiveness, the cost-benefit ratio and the possible negative aspects.

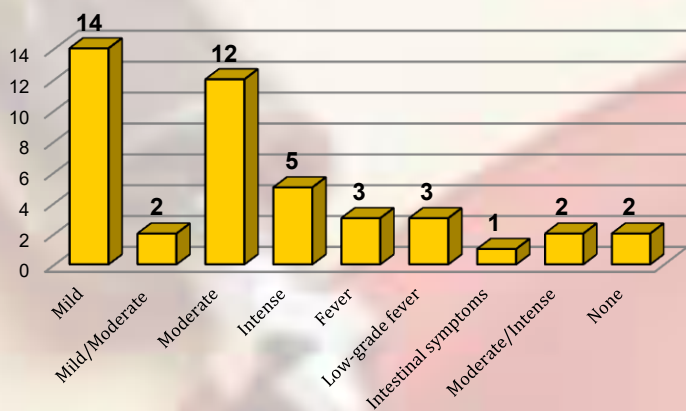
Materials and Methods

The list of patients was obtained by extrapolating from the administrative system the expenditure carried out in 2023 in the clinical pharmacy. Through the e4Cure portal, it was possible to follow reports in the period prior to the injection treatment and at each scheduled follow-up.

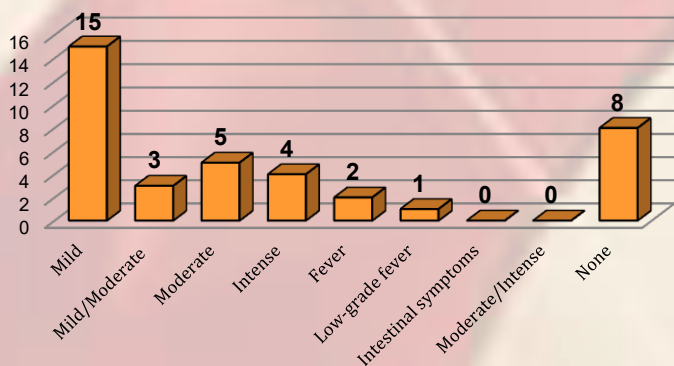
Results

The analysis included 38 patients with a mean age of 48 years. **No.6 decided to voluntarily discontinue treatment due adverse events.** After the first administration, the pain sensation was classified as mild in 14 patients, moderate in 12 and intense in 5. Interestingly, **after the first injection, there were only 2 patients who reported no side effects**, while with increasing number of administrations, the patients with no side effects was significantly higher.

Symptoms at first administration

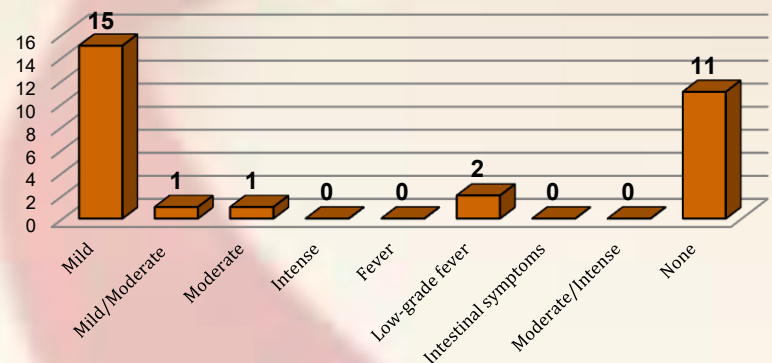


Symptoms at second administration

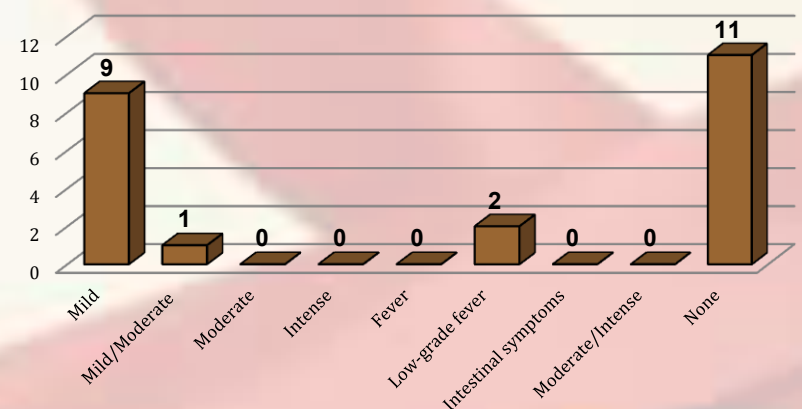


In particular, after the third administration, 11 has reported no adverse events while **nobody reported a severe pain sensation**. A similar picture emerged after the fourth administration, **n.11 reported no adverse events** as a result of the administration of the two drugs, and none reported the perception of severe or moderate pain.

Symptoms at third administration



Symptoms at fourth administration



An economic analysis showed that the average price of oral therapies amounts to €991 for a two-month intake, while an extrapolation of the costs over 12 months results in average costs per patient of €5.948. The average total effective expenditure/patient for therapies up to Dec 2023, calculated on the basis of the average cost of oral therapy plus the introduction of the long-acting formulation at different times of the years is €6.764 with an **increase in total expenditure of €29.778**.

Average bimonthly oral therapy expenditure	Average annual oral therapy expenditure	Average total effective expenditure/patient for therapies up to Dec 2023	Total expenditure increase 2023
991 €	5.948 €	6.764 €	+29.778 €

However, a significant fact emerges when attempting to develop a projection of the expenditure delta for the year 2024 with the following patients treated with the long-acting formulation only, as **an overall decrease in estimated expenditure of -12.222€ is observed when we compare the year 2023 with 2024**, managing to almost fully amortize the cost of injection therapy only two years.

Conclusions:

Although pain at the injection site is a critical adverse effect in terms of the persistence of injection therapy, this phenomenon appears to be more pronounced during the first administrations, whereas it decreases during subsequent treatment phases. Although there is an initial increase in drug expenditure in the year when the long-acting regimen is introduced the investment seems to be almost fully amortized in the two years following the switch to therapy. Based on the observations, the long-term regimen thus appears to be an effective tool for curbing drug expenditure two and a half years after its introduction and improving adherence to HIV treatment.

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