COST-UTILITY ANALYSIS OF LONG-ACTING CABOTEGRAVIR + RILPIVIRINE FOR THE TREATMENT OF HIV INFECTION IN THE UNITED KINGDOM

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Introduction

• Antiretroviral therapy (ART) has enabled people living with HIV (PLHIV), if treated and appropriately managed, to have a life expectancy near to that of the general population1
• To effectively maintain viral suppression, lifetime adherence to daily dosing of all currently available ART is required1
• Poor adherence has been demonstrated to be a large contributor to virologic failure, drug resistance, HIV progression, and increased hospitalization, mortality, and associated disease-management costs1,4
• Factors contributing to suboptimal adherence to daily oral dosing may be medical (eg, malabsorption, dysphagia, adverse events), emotional (eg, fear of disclosure, daily reminder of HIV), or practical in nature (eg, lifestyle, employment)2
• Cabotegravir + rilpivirine long-acting (CAB LA+RPV LA) is the first ART administered via intramuscular injection either every month or every 2 months (which is preferred by patients) by a healthcare professional
• Because an injection is administered every 2 months,18 CAB LA+RPV LA removes the burden of daily oral dosing of ART and may improve adherence, quality of life, and clinical outcomes in PHLIV who experience the above-mentioned issues with oral ART
• Therefore, it is important to understand the potential impact of an LA injectable on adherence and viral transmission rates in PHLIV
• We evaluated the cost effectiveness (costs and quality-adjusted life years [QALYs]) of CAB LA+RPV LA vs standard of care (SoC) daily oral ART

Methods

• A previously published Markov cohort state-transition model was adapted to account for adherence and its subsequent impact on viral transmission1,13
• Efficacy was assumed to be equal between comparators in line with the results of a noninferiority trial and confirmed via an indirect treatment comparison10,14
• The relationship between adherence and suppression is as described by Ross et al14 in that, as adherence decreases, viral suppression is expected to decrease
• Health states in the model were defined by viral load and CD4 cell count
• Because CAB LA+RPV LA removes the need for adherence to daily dosing, its effectiveness in clinical practice was assumed to be similar to clinical trial settings
• Real-world adherence estimates from the literature were applied to the SoC arm (5%–25% reduction from optimal levels observed in clinical trials17; costs were assumed to remain the same (ie, patients fill prescriptions but do not adhere completely to the regimen))
• Health state utility values were assigned by CD4 cell count category18
• A UK National Health Service pricing perspective was adopted with an annual discount rate of 3.5% for costs and utility
• Drug acquisition costs assumed price parity based on the average cost of the most used 3 integrase inhibitor single-tablet regimens

Discussion

• CAB LA+RPV LA has the potential to optimize adherence and subsequently reduce onward transmission vs oral SoC, leading to QALY gains and improved health outcomes for patients
• As a result of optimized adherence and minimal onward transmission, model estimates of treatment with CAB LA+RPV LA demonstrate substantial cost savings vs SoC
• Interfering medical conditions and HIV-specific emotional issues associated with daily oral dosing have not been included in analyses, but they may further increase the estimated QALY gains
• Thus, these benefits demonstrated are likely to be an underestimate
• Further, it is important to note that, although economic analysis results in point estimates of cost or QALY gain, HIV is a complex infection and, thus, requires simplifying assumptions (as detailed) to model
• It is likely that results will be highly variable around the point estimates from modeling
• Nevertheless, all analyses demonstrated potential additional benefits and cost savings for PLHIV receiving CAB LA+RPV LA compared with SoCs, thus demonstrating a large potential impact of the first LA regimen CAB LA+RPV LA

Conclusions

• CAB LA+RPV LA is the first LA alternative available for maintenance treatment of HIV infection
• CAB LA+RPV LA offers an alternative for PLHIV for whom daily oral ART is challenging and provides a new choice of modality for effective management of this lifelong condition