REFERENCES


The Public Health and Economic Impact of Early Diagnosis and Early HAART Treatment in HIV in the UK

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INTRODUCTION
- In 2009 the number of people living with HIV in the United Kingdom (UK) reached approximately 105,000, and a quarter of those people were unaware of their infection.
- Recent papers have shown renewed interest in both universal voluntary HIV testing and treatment for individuals with diagnosis.
- A national audit by the British HIV Association (BHIVA) showed that 40% of deaths occurring in BHIVA-positive adults in the UK in 2009 were directly attributable to the HIV diagnosis being made too late for effective treatment. Earlier diagnosis allows treatment to be initiated at a higher CD4 cell count level and leads to reduced mortality and morbidity.
- UK national guidelines for HIV testing (2008) recommended by BHIVA, the British Association of Sexual Health and HIV (BASHH), and the British Infection Society (BIS), support the need for a more comprehensive and inclusive universal approach to testing for HIV in the UK.
- Clinical guidelines recommend that treatment should be started in all individuals with a CD4 cell count of ≥350 cells/µL, or in individuals with a CD4 cell count of ≤250 cells/µL, who are experiencing complications.

OBJECTIVES
- To estimate the clinical benefit, cost impact, and cost-effectiveness of two potential strategies for improving the clinical management of HIV infection in the UK.

METHODS

Model Structure
- A Markov Model was developed to explore the cost-effectiveness of early diagnosis and early treatment, compared with current clinical practice, for individuals with HIV infection in the UK (Figure 1).

Model Parameters
- The initial CD4 distribution was based on data from the UK Office of National Statistics. The distribution was identical for treatment-naive and undiagnosed patients.
- Male sex was used as the baseline for the model.
- The model was validated using observed data from the UK Collaborative HIV Cohort (CHAC) study and the UK Collaborative HIV Cohort (UK Cohort) study.

RESULTS
- The cohort's viral load and CD4 cell count distribution were estimated using the UK CHAC cohort data.
- CD4 cell count decline during disease progression was estimated using the EuroSIDA observational study, which described changes in CD4 count in individuals with stable HIV RNA levels.
- Post-treatment initiation of ART was estimated using the meta-analysis of clinical trials and the Centre for Disease Control and Prevention (CDC) guidelines for the duration of the treatment phase.

DISCUSSION
- The overall objective of this study was to estimate the clinical benefit and cost-effectiveness of two potential strategies for improving the clinical management of HIV infection.

CONCLUSIONS
- The results indicate that the implementation of a comprehensive strategy to identify all persons with HIV infection and to initiate early treatment can lead to significant cost savings within the National Health Service.
- Clinical guidelines for universal testing and earlier treatment cannot be considered in isolation. The implementation of a comprehensive strategy would have significant cost savings for the National Health Service.

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Prepared at: Gilead Best Practice Sharing Event
May 19, 2011
Shenfield, United Kingdom