

Cost-effectiveness of enfuvirtide in HIV therapy for treatment-experienced patients in the United States

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Abstract

Enfuvirtide (ENF) is the first of a new class of antiretrovirals (ARVs) known as the HIV fusion inhibitors. Two phase III studies of ENF, TORO 1 and TORO 2, demonstrated that ENF given in combination with optimized background (OB) therapy significantly improved virological response, increased the time to virological failure, and increased CD4-cell count compared with OB alone among highly treatment-experienced patients. The present study investigated the long-term clinical outcomes, costs, and cost-effectiveness of ENF. Outcomes, costs, and cost-effectiveness were estimated using a Markov model. Viral suppression and immune reconstitution were determined from the outcomes of the clinical trials. Time to immunological failure, time to AIDS-defining event (ADE), and time to death were estimated based on published mathematical models of disease progression. Costs were based on published estimates of the use and costs of ARVs, cost of managing ADEs, and cost of laboratory and other outpatient services. Cost-effectiveness was calculated as the incremental cost per year of life gained, adjusted for quality of life. The combined effects of an increase in CD4 count and delayed time to virological and immunological failure with ENF + OB were predicted to produce a mean life expectancy of 7.4 years from initiation of therapy, which was 1.8 years (1.5 quality-adjusted life-years [QALYs]) greater than the life expectancy associated with OB alone. The incremental cost-effectiveness of ENF + OB was estimated to be \$24,604 per QALY. ENF is projected to increase time to immunological failure, delay onset of new AIDS-defining events, and increase life expectancy by more than 1.5 years among treatment-experienced HIV-infected patients. The cost-effectiveness of ENF is comparable to many existing treatment and prevention management strategies for HIV. © Mary Ann Liebert, Inc.

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Chemicals and CAS Registry Numbers

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