

Personalizing biologic treatment to individual patients with rheumatoid arthritis is cost-effective

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Berlin, Germany, June 7 2012: Data presented today at EULAR 2012, the Annual Congress of the European League Against Rheumatism, demonstrates that tailoring biologic treatment to individual patients with rheumatoid arthritis (RA) can reduce total costs by €2,595,557 per 272 patients over 3 years (95 percentile range -€2,983,760 to -€2,211,755), whilst increasing effectiveness by an average of 3.67 quality-adjusted life years (QALYs)*. Cost savings were mostly on drug costs.

The Dutch study, which investigated 272 patients with RA starting adalimumab treatment, measured DAS28** HAQ*** and biologic use over three years. A treatment protocol for personalised care was defined in which EULAR**** response and adalimumab serum drug level test results at six months determined whether adalimumab treatment was continued or discontinued, dosing was altered or, in case of non-response, another biological treatment was started. Using a patient level Markov model, outcomes in DAS28, HAQ, and biologic use for the personalised care group were simulated and compared to the observed drug use and disease course.

Charlotte Krieckaert from the Jan van Breemen Research Institute, Reade, The Netherlands and lead author of the study stated:

"Governments and health authorities around the world are looking to save money by cutting [costs](#) and providing reduced access to more expensive treatments. This study demonstrates that with careful

monitoring and testing disease activity at six months, costs for RA treatment can be reduced and [treatment](#) effectiveness can actually increase."

In total, €2,562,494 was saved on biological drug costs and testing costs amounted to €10,872, resulting in an average incremental cost-effectiveness ratio (ICER)***** of -€707,236 per QALY gained. Personalised care saved costs and was more effective in 77.6% of simulations, but was cost saving and less effective in 22.4%.

More information: Abstract Number: OP0149

*QALY (Quality-adjusted life year) is a measure of how many extra months or years of life of a reasonable quality a person might gain as a result of treatment. Various factors are considered in this measurement, including, the level of pain the person is in, their mobility and their general mood. The quality of life rating can range from negative values below 0 (worst possible health) to 1 (the best possible health).

**DAS28 (Disease Activity Score) is an index used by physicians to measure how active an individual's RA is. It assesses number of tender and swollen joints (out of a total of 28), the erythrocyte sedimentation rate (ESR, a blood marker of inflammation), and the patient's 'global assessment of global health'. A higher score indicates more active disease.

***HAQ DI (Health Assessment Questionnaire – Disease Index) is a patient questionnaire that measures function and health-related quality of life through measuring a patient's ability to perform everyday tasks.

****EULAR response criteria were developed to measure individual response in clinical trials. The EULAR response criteria classify individual patients as non-, moderate, or good responders, dependent on

the extent of change and the level of disease activity reached.

*****ICER (Incremental cost-effectiveness ratio) is an equation used to provide a practical approach to decision making regarding health interventions and is typically used in cost-effectiveness analysis. ICER is the ratio of the change in costs to incremental benefits of a therapeutic intervention or treatment.

Provided by European League Against Rheumatism

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