The use of modelling to evaluate new drugs for patients with a chronic condition: the case of antibodies against tumour necrosis factor in rheumatoid arthritis

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Record Status
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Citation

Authors' objectives
The main objective of the research reported here was to overcome some of the identified limitations of the Birmingham Preliminary Model (BPM). Thus, the study sought to address the structural issues relating to mortality and quality of life (QoL) effects and to identify data on the general pattern of QoL of rheumatoid arthritis (RA) patients. The aim was to restructure the model so that different sequences of treatment could be considered, and to determine the sequence that best represents current clinical practice in the UK. An additional aim was to demonstrate the flexibility inherent in using a modelling approach to consider these health policy questions.

Authors' conclusions
The main achievement of this work was to bring about a more realistic modelling of real-life clinical pathways and events, as it has developed from the BPM to the BRAM. This has been brought about by overcoming structural and data limitations. In addition, the modelling approach reflected in the BRAM is applicable to other chronic conditions, especially those where a sequential approach to therapeutic options exists. The model has been successfully restructured so that different sequences of treatment can readily be considered, including the sequence that best represents current clinical practice in the UK. In addition, the flexibility inherent in using a modelling approach to consider these health policy questions has been demonstrated. One of the key uncertainties that can now be explored concerns the impact of new drugs on disease progression. Current evidence on this is weak, but should new agents demonstrate such a benefit then the BRAM may be a suitable vehicle through which to investigate the costs and full effects.

Inevitably, there remain problems and limitations with the BRAM, but these are almost entirely data limitations. As data on these issues become available the BRAM provides a convenient tool through which reanalysis might be undertaken.

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