The impact of anti-TNF-α therapy on the nature of service provision

Sir, There is accumulating evidence how the use of biological therapy might change the face of rheumatoid arthritis (RA) care, both in purely financial terms and in terms of the use of other resources [1, 2]. We believed that in our unit the most severely affected RA patients, who had previously occupied a significant number of in-patient beds and out-patient appointments, were being seen much less frequently if they were successfully established on anti-TNF therapy. We tested this hypothesis by examining the charts of all our RA patients who had remained on anti-TNF therapy for at least 24 months by November 2004, and analysing their use of various resources in the rheumatology unit from the time of initiating therapy up to November 2004, and an equivalent time period before commencing the treatment. As these were the earliest patients to commence biological therapy, they generally represented the most severely affected patients in our unit, with the most resistant disease. Although this was not primarily an economic study, we were also able to make some estimate of the cost impact of the changes in patterns of care on the overall unit budget.

Thirty-four RA patients were treated with anti-TNF-α therapy for a total of 1486 months. The median time on anti-TNF-α therapy was 43.7 months (range 24–61) per patient. All patients had received either infliximab or etanercept. Two patients had switched to etanercept from infliximab due to lack of efficacy, and one had switched the other way, but all had received anti-TNF therapy continuously for at least 24 months.

The 34 patients spent a total of 343 days as rheumatology in-patients in the period before commencing therapy, as compared with 154 afterwards (P < 0.05). Attendances at conventional out-patient clinics also fell from 248 before treatment to 42 afterwards (P < 0.01). By contrast, attendances at our day ward, where we choose to administer infliximab infusions, and monitor etanercept patients, rose from 223 to 829 (P < 0.01).

DMARDS used by the patients in the pre-anti-TNF-α assessment period, with the total number of months for which the DMARD was prescribed in the group of patients as a whole, were as follows: methotrexate (407), sulphasalazine (32), myocrisin (71), cyclophosphamide (23), lefunomide (86), penicillamine (94), hydroxychloroquine (115) and azathioprine (32). The only DMARD used in the post-treatment period was methotrexate (860), with the exception of one patient who remained on azathioprine (40) for another indication. The median daily dose of oral prednisolone fell from 5.0 mg (95% confidence interval 0.0–10.0) in the pretreatment period to 1.5 mg in the post-treatment period (0.0–4.8) (P < 0.01).

This is a small cohort of patients in a single centre, but represents a group of patients who previously made high demands on rheumatology resources, particularly in-patient beds. Our study was not designed to systematically examine the economics of biological therapy, but rather to describe its impact on everyday practice. Nevertheless, certain general observations may be made on the cost implications of the change. One in-patient day costs approximately three times as much as an out-patient appointment in our unit; overall there was a net reduction of about £20 000 in the total cost of in-patient, out-patient and day ward episodes in this cohort over the 3.5-yr period of the study. The cost of drugs alone, however, without monitoring or other costs, comes to approximately £900 000 in these patients. In general economic terms therefore, we conclude that while the care episode savings make little impact on the overall cost of biological treatment, we found no evidence that the changes in care patterns add to the economic burden. Approximately 30% of our RA patients who commenced biological treatment were unable to remain on the therapy in the long term, due to lack of efficacy or side-effects, and this reduced use of resources obviously does not include these patients. Neither does it take into account use of primary care, or admissions to other units, although we have ascertained that few complications of biological therapy in our patients are managed in other departments. Again, it takes no account of the nature of interventions during in-patient or out-patient attendances, which might influence overall costs, although examination of patient files shows that by far the commonest reason for admission before therapy was multidisciplinary management of active disease, while admissions on therapy comprised mainly treatment of localized sepsis or active disease in a single joint. Finally, we have not factored in the ability of our patients to become economically active following treatment. We are aware of at least two patients in our cohort who are now working who were previously unable to hold down a job due to their disease, and another two who are working more hours than before. However, for various reasons, not all patients will admit to their employment or sources of income from paid work, and therefore these figures may not be truly reflective of the cohort’s economic activity.

In summary, in our most severely affected RA patients, we have shown a 55% reduction in use of rheumatology in-patient beds, a 70% reduction in median steroid dose, and a significant rationalization of DMARD use over the first 2–5yr of continuous anti-TNF therapy. There was an approximate doubling of the use of out-patient services. This represents a significant change in the nature of care for RA patients with resistant disease if they are successfully established on anti-TNF therapy, but overall we found no evidence that the changing pattern of resource use added to the economic burden of biological treatment.

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