

Table 2 Baseline data* for patients developing extra-articular disease versus non-extra-articular rheumatoid arthritis patients

N	ExRA	Non-ExRA	p
	22	157	
Age; years (mean; SD)	48.4 (10.2)	51.9 (12.7)	0.21
Male/female (N)	8/14	56/100	0.89
Current smoker	10 (50%)	41 (36%)	0.22
Ever smoker	15 (75%)	70 (61%)	0.23
IgM RF positive	19 (90%)	116 (76%)	0.25
IgA RF positive	20 (95%)	115 (79%)	0.05
IgG RF positive	18 (86%)	97 (64%)	0.05
ANA positive	10 (45%)	65 (41%)	0.72
Anti-CCP positive	19 (90%)	118 (79%)	0.25
CRP, mg/l (median; IQR)	5 (0–61)	15 (0–42)	0.88
ESR, mm/h (mean; SD)	40.8 (32.5)	35.2 (27.0)	0.38
Complement (mean; SD)	10.9 (3.4)	12.0 (3.8)	0.22
C3, % of normal (mean; SD)	114.2 (11.6)	120.7 (27.3)	0.11
C4, % of normal (mean; SD)	106.1 (25.0)	129.6 (39.5)	0.03
HAQ, mean; SD	0.94 (0.65)	0.92 (0.59)	0.89

ANA, Antinuclear antibody; CCP, cyclic citrullinated peptide; CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; ExRA, extra-articular rheumatoid arthritis; HAQ, Health Assessment Questionnaire; IQR, interquartile range; RF, rheumatoid factor.

*Missing data for smoking (two with ExRA and 42 non-ExRA patients), C3 and C4 (seven with ExRA and 37 non-ExRA patients), IgM RF, IgA RF, IgG RF and anti-CCP (one with ExRA, six non-ExRA patients).

Authors' affiliations

C Turesson, L T H Jacobsson, Department of Rheumatology, Malmö University Hospital, Malmö, Sweden

K Eberhardt, E Lindqvist, Department of Rheumatology, Lund University Hospital, Lund, Sweden

Correspondence to: Dr Carl Turesson, Department of Rheumatology, Malmö University Hospital, Södra Förstadsgatan 101, S-205 02 Malmö, Sweden; turesson.carl@mayo.edu

Accepted 29 May 2007

REFERENCES

- Lindqvist E, Saxne T, Geborek P, Eberhardt K. Ten year outcome in a cohort of patients with early rheumatoid arthritis: health status, disease process, and damage. *Ann Rheum Dis* 2002;**61**:1055–9.
- Turesson C, Jacobsson LT. Epidemiology of extra-articular manifestations in rheumatoid arthritis. *Scand J Rheumatol* 2004;**33**:65–72.
- Johnson U, Truedsson L, Gustavii B. Complement components in 100 newborns and their mothers determined by electroimmunoassay. *Acta Pathol Microbiol Immunol Scand* 1983;**91**:147–50.
- Turesson C, O'Fallon WM, Crowson CS, et al. Occurrence of extraarticular disease manifestations is associated with excess mortality in a community based cohort of patients with rheumatoid arthritis. *J Rheumatol* 2002;**29**:62–7.
- Watts RA, Mooney J, Lane SE, Scott DG. Rheumatoid vasculitis: becoming extinct? *Rheumatology (Oxford)* 2004;**43**:920–3.
- Ward MM. Decreases in rates of hospitalizations for manifestations of severe rheumatoid arthritis, 1983–2001. *Arthritis Rheum* 2004;**50**:1122–31.
- Turesson C, McClelland RL, Christianson TJ, Matteson EL. No decrease over time in the incidence of vasculitis or other extraarticular manifestations in rheumatoid arthritis: results from a community-based study. *Arthritis Rheum* 2004;**50**:3729–31.
- Ritchie RF, Palomaki GE, Neveux LM, et al. Reference distributions for complement proteins C3 and C4: a practical, simple and clinically relevant approach in a large cohort. *J Clin Lab Anal* 2004;**18**:1–8.
- Scott DG, Bacon PA, Allen C, et al. IgG rheumatoid factor, complement and immune complexes in rheumatoid synovitis and vasculitis: comparative and serial studies during cytotoxic therapy. *Clin Exp Immunol* 1981;**43**:54–63.
- Melson RD, Horsfall AC, Schrieber L, et al. Anti-C1q affinity isolated circulating immune complexes correlate with extra-articular rheumatoid disease. *Rheumatol Int* 1986;**6**:227–31.

The use of the tumour necrosis factor antagonist infliximab in heart transplant recipients: two case reports

S Metyas, D La, D G Arkfeld

Ann Rheum Dis 2007;**66**:1544–1545. doi: 10.1136/ard.2007.070383

Inflammatory cytokines, such as tumour necrosis factor alpha (TNF- α), have been implicated in the pathophysiology of heart failure, leading to the hypothesis that TNF inhibition might improve the symptoms of patients with moderate-to-severe cardiac symptoms. Recent data from the Anti-TNF Therapy Against Congestive Heart failure (ATTACH) pilot study, however, suggested that infliximab, a chimeric monoclonal antibody against TNF- α , not only failed to produce clinical benefits, but given at higher doses (10 mg/kg) was associated with a worsening of cardiac symptoms. Conversely, two large-scale trials, RECOVER and RENAISSANCE, examined the effects of infliximab and etanercept in over 2000 patients

with heart failure, finding no increased risk of mortality or morbidity.¹ We describe two case reports of patients who received TNF antagonist therapy after heart transplant for heart failure. The patients had a previous history of rheumatoid arthritis, diabetes mellitus, and hypertension, as well as other conditions, including hypercholesterolemia, psoriasis and colon cancer (case 1, Hispanic man, 58 years old) and peripheral vascular disease (case 2, African-American woman, 63 years old). The use TNF antagonist therapy after heart transplant was of concern, in light of the ATTACH study results, as well as the lack of data regarding tumour recurrence in patients on TNF antagonists.

Whereas studies of patients with heart failure have correlated TNF levels with the severity of heart failure² and prediction of mortality,^{3–5} the exact origin of elevated circulating TNF levels during myocardial ischemia and heart failure is still unclear. Interestingly, TNF has been suggested to have a protective negative inotropic action on the failing heart, contradicting the previous paradigm of TNF being harmful.⁶ TNF has also been implicated in the production of heat shock proteins, enabling cells to survive stressful conditions such as ischemia.⁷ Placebo-controlled studies have shown that targeted therapy antagonising TNF in patients with moderate-to-severe heart failure has resulted in increased mortality and hospitalisations and the potential induction of a new onset of heart failure or exacerbation of existing disease. It is unclear whether TNF antagonists are safe in heart transplant recipients. Compared with heart transplant recipients without rejection, plasma TNF- α levels were significantly higher in patients with moderate to severe graft rejection.⁸

In the current case study, case 1 underwent heart transplant surgery in 2002 and subsequently a partial colectomy, and was treated with eight weeks of adjuvant chemotherapy for stage 2A colon cancer, initiating infliximab in 2005. The patient has been doing well with infliximab, with no noticeable worsening of the skin disease towards the end of the six-week infusion schedule. Case 2 suffered from dilated and congestive cardiomyopathy status after heart transplantation in May 2002. The patient's rheumatoid arthritis remained active while on methotrexate and prednisone therapy. The patient began infliximab in 2006, with a good response and complete cessation of narcotic medications; however, treatment was discontinued after four months as the patient developed bed sores. Four years after transplant surgery, we observed no complications, from a cardiac standpoint, associated with infliximab treatment. This is, to our knowledge, the first case

series reporting the use of TNF antagonists in heart transplant recipients.

Authors' affiliations

S Metyas, D La, D G Arkfeld, USC, Keck School of Medicine, Los Angeles, California, USA

Correspondence to: Professor D G Arkfeld, University of Southern California, Keck School of Medicine, Department of Medicine – Rheumatology, 2011 Zonal Avenue, HMR 711, Los Angeles, CA 90033, USA; arkfeld@usc.edu

Accepted 21 May 2007

REFERENCES

- 1 Anker SD, Coats AJS. How to RECOVER from RENAISSANCE? The significance of the results of RECOVER, RENAISSANCE, RENEWAL and ATTACH. *Int J Cardiol* 2002;**86**:123–30.
- 2 Torre-Amione G, Kapadia S, Benedict C, et al. Proinflammatory cytokine levels in patients with depressed left ventricular ejection fraction: a report from the Studies of Left Ventricular Dysfunction (SOLVD). *J Am Coll Cardiol* 1996;**27**:1201–6.
- 3 Ferrari R, Banchetti T, Confortini R, et al. Tumour necrosis factor soluble receptors in patients with various degrees of congestive heart failure. *Circulation* 1995;**92**:1479–86.
- 4 Deswal A, Petersen NJ, Feldman AM, et al. Cytokines and cytokine receptors in advanced heart failure: an analysis of the cytokine database from the Vesnarinone trial (VEST). *Circulation* 2001;**103**:2055–9.
- 5 Rauchhaus M, Doehner W, Francis DP, et al. Plasma cytokine parameters and mortality in patients with chronic heart failure. *Circulation* 2000;**102**:3060–7.
- 6 Yokoyama T, Vaca L, Rossen RD, et al. Cellular basis for the negative inotropic effects of tumour necrosis factor- α in the adult mammalian heart. *J Clin Invest* 1993;**92**:2303–12.
- 7 Mandi Y, Hogue M, Talha EM, et al. Cytokine production and antibodies against heat shock protein 60 in cardiomyopathies of different origins. *Pathobiology* 2000;**68**:150–8.
- 8 Abdallah AN, Billes MA, Attia Y, et al. Evaluation of plasma levels of tumour necrosis factor alpha and interleukin-6 as rejection markers in a cohort of 142 heart-grafted patients followed by endomyocardial biopsy. *Eur Heart J* 1997;**18**:1024–9.

Effective treatment of a colchicine-resistant familial Mediterranean fever patient with anakinra

Loes M Kuijk, Anita M A P Govers, Willem J D Hofhuis, Joost Frenkel

Ann Rheum Dis 2007;**66**:1545–1546. doi: 10.1136/ard.2007.071498

Familial Mediterranean fever (FMF) is an autoinflammatory disorder, characterized by periodic fever and serosal inflammation, often complicated by systemic amyloidosis.

Maintenance treatment of FMF with colchicine can reduce disease activity and prevent amyloidosis. Some patients, however, fail colchicine therapy. Many reports have recently

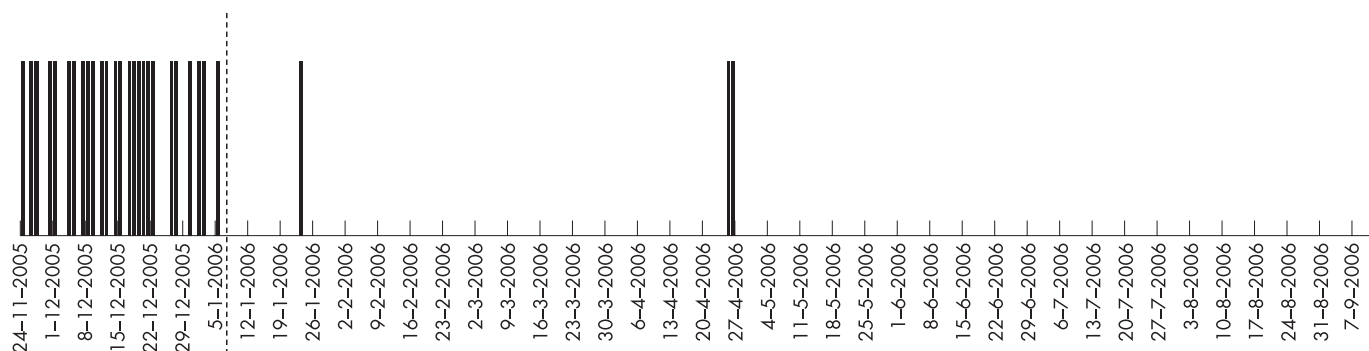


Figure 1 Disease activity before and during anakinra treatment. The bars indicate days when the patient reported being ill in her diary and/or her temperature exceeded 38°C. The vertical dotted line indicates start of treatment.