

Outcome predictors in patients with idiopathic inflammatory myopathies

Sirs,

Idiopathic inflammatory myopathies (IIM) are subclassified into three major groups: polymyositis (PM), dermatomyositis (DM) and inclusion body myositis (IBM).

The search for prognostic factors may be crucial in the diagnosis and initial treatment but the lack of epidemiological data combined with small patient cohorts limits their recognition. In order to undertake successful clinical trials it is important to have optimised tools for assessing adult patients and to determine the best outcome measures.

We reviewed the literature using the MEDLINE database, trying to identify poor prognostic factors. No limiting restrictions were applied. We analysed:

Age: Is the prognostic factor with the highest number of publications. Older patients have often been reported to have an increased mortality rate (1-3). In the Marie *et al.* cohort a cut-off was set at over 65 years (1) and in the Danko *et al.* cohort at over 45 (3). Another report confirmed that patients who achieved remission were younger than those who did not (48 vs. 53 yrs; $p=0.0526$) (4);

Sex: Few studies have evaluated sex as a prognostic factor. Only Bronner *et al.* concluded that in 165 patients followed, significant disability was associated with male sex (OR 3.1) (5);

Ethnicity: We did not find any study;

Delay in diagnosis/treatment: Marie *et al.* found that the median duration of clinical symptoms before PM/DM diagnosis tended to be shorter in patients who experienced remission (3m vs. 5.5m; $p=0.8182$) (4). Airio *et al.* also deduced that delay in diagnosis was a predictor of death (2);

Cancer associated myositis: When compared with the control group (IIM only) András *et al.* found that the combination of myositis and cancer had a worse prognosis and a lower survival rate at 1 (86% vs. 95%) and 5 years (56% vs. 92%) (6);

Initial creatine kinase level: In 1986 Fudman *et al.* reported a worse prognosis for 7 patients with IIM and normal CK level when compared with others who had a high CK (7). However, in two recent and large cohorts, no relationship between the CK level and patient outcome was found (2, 4);

Autoantibody profile: They are present in approximately 70-80% of patients with IIM and are often divided into the myositis-specific autoantibodies and myositis-associated autoantibodies. Three subsets

Table I. Prognostic factors in patients with idiopathic inflammatory myopathies.

| | |
|-------------------------------|--|
| Age | Younger onset has higher rates of remission Older onset has increase mortality |
| Sex | Significant disability associated with male sex |
| Ethnicity | No studies found |
| Delay in diagnosis/treatment | Delay in diagnosis predictor of death |
| Cancer associated myositis | Lower survival rate |
| Initial creatine kinase level | Studies non-concordant |
| Auto-antibody profile | anti-Jo1: predicts persistent use of drugs anti-Mi2: better treatment response anti-SRP: severe proximal muscle weakness and muscle atrophy anti-155/140: higher frequency of internal malignancy |
| Histological abnormalities | No studies found |

of myositis-specific autoantibodies have been identified: anti-aminoacyl-tRNA synthetase (e.g. anti-Jo1), anti-Mi-2 and anti-signal recognition particle (anti-SRP). New autoantibodies have also been established recently notably: anti-155/140 and anti-CADM-140. These autoantibodies can be useful in the identification of IIM patients and poor outcome. For instance:

a) **anti-Jo1:** Are associated with arthritis, "mechanic's hands", myositis, Raynaud's phenomenon and interstitial lung disease (clinically referred to as the anti-synthetase syndrome). Bronner *et al.* noted that the presence of Jo1 autoantibodies predicted the persistent use of drugs (OR 4.4) (5)

b) **anti-Mi-2:** Are present in patients with PM, IBM as well as those with DM. However positive patients evaluated by Hengstman *et al.* had improved treatment response when compared to others (41% vs. 15%; $p<0.01$) (8)

c) **anti-SRP:** Kao *et al.* found that the nineteen SRP-positive PM patients evaluated, had severe proximal muscle weakness and muscle atrophy at initial presentation when compared with anti-aminoacyl-tRNA synthetase-positive PM controls. However, survival in SRP-positive patients was comparable with in SRP-negative patients, in contrast with the earlier reports (9)

d) **anti-155/140:** Japanese patients with DM immunoprecipitated 155 and 140 kDa proteins had a significantly higher frequency of internal malignancy than those without (71 vs. 11%; $p<0.005$) (10).

Histological abnormalities: We did not find any study;

We think that these data may be useful in

determining the outcome for the coming trials. Age, sex, delay in diagnosis, cancer associated myositis, autoantibody profile are outcome predictors (Table I).

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For details of how the literature review was performed and the exact parameters used, please contact the authors directly.

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