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Sulphoxidation status in rheumatoid arthritis

Str: In a recent issue of this journal Emery et al found an increased prevalence of poor sulphotoxidation in patients with rheumatoid arthritis (RA). Using the same methods as Emery’s group, we have found similar results.

Sulphoxidation status was assessed in 116 of 200 patients enrolled in a comparative study of sulphasalazine and d-penicillamine as second line drugs in RA (table). Follow up data are available on these patients for between 5 to 7 years from entry into the trial. Surprisingly, no increase in toxicity from either drug was observed in the poor sulphoxidisers group (figure).

Previous studies have suggested that toxicity from intramuscular gold2 and d-penicillamine1 is related to sulphotoxidation status. In contrast with gold and d-penicillamine, however, sulphasalazine is metabolised predominantly by acetylation rather than sulphotoxidation, and one would therefore have predicted that toxicity from sulphasalazine would not be influenced by sulphotoxidation status. In this study we failed to find any association between toxicity from d-penicillamine and sulphotoxidation status. Although the period of follow up in this study was longer than in previous studies, this finding cannot be explained by an excess of late toxicity in the good sulphoxidisers group.

A second possible explanation is that the group in whom sulphotoxidation status was measured was not representative of the group as a whole. To consider this point we noted toxicity in those patients in whom sulphotoxidation status was not assayed. Of the patients receiving sulphasalazine in whom sulphotoxic-
ation status was known, 35% developed toxicity compared with 30% of those in whom sulphotoxidation status was not known. In those receiving d-penicillamine the figures were 34% and 38% respectively. Thus although there was a small excess in toxicity in those receiving d-penicillamine who did not have sulphotoxidation status assayed, this was not statistically significant (χ2). We cannot rule out the possibility that the ratio of good and poor sulphoxidisers might have been different in those who were not assayed. There were 12 deaths (five sulphasalazine, seven d-penicil-


Numbers (percentages) of patients receiving sulphasalazine or d-penicillamine who were good or poor sulphoxidisers

<table>
<thead>
<tr>
<th>Poor</th>
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<tr>
<td>Sulphasalazine (n=63)</td>
<td>49 (78)</td>
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<td>d-Penicillamine (n=53)</td>
<td>36 (68)</td>
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Expected

26 (22) | 90 (78) |

Toxicity due to sulphasalazine or d-penicillamine in the good and poor sulphoxidisers groups.