but it would obviously be more convenient for the patient
if the drug could be given as a single dose once in the
morning. Robin, Tolchin, and Rodnan (1973) found that
the average decrement in serum uric acid was similar
whether allopurinol was given as a single 300 mg dose or
as 100 mg 3 times a day. However, in that study the serum
uric acid was measured only once during 24 hours, whereas
the critical fact is to know whether serum uric acid levels
are as well controlled throughout the 24 hours by once
daily as by divided dosage, since rapid fluctuations in
serum uric acid levels can precipitate attacks of gout.

Three subjects were studied in detail. After equilibrium
on one or other of the regimens, blood was taken every 6
hours and urine collected over continuous 6-hour periods
for 3 days. They were then taken off treatment and later
re-equilibrated on the other dosage regimen, urine and
blood being again collected 6-hourly over the final 3 days.
The serum uric acid was equally well controlled throughout
the 24 hours on either regimen, and there was little differ-
ence in urinary levels.

It is therefore evident that allopurinol may be given once
daily, a considerable advantage in patients on long-term
therapy for gout.

Reference
Rheum. 16, 128

Stimulation of polymorph migration by a factor produced by
steroid-treated monocytes. By R. D. Stevenson (University
Departments of Medicine and Pathology, Western Infirmary,
Glasgow)

Human mononuclear leucocytes cultured in the presence
of hydrocortisone produce a supernatant factor which
markedly stimulates the in vitro migration of allogenic
polymorphs. The mononuclear leucocytes used in the
above experiments consisted of lymphocytes and mono-
cytes, and the present study was undertaken to determine
the relative roles of these difference cell types.

As shown in Table I polymorph migration was stimu-
lated marginally by both steroid-treated lymphocyte
supernatants and by hydrocortisone alone. On the other
hand, approximately five times greater stimulation of
migration was induced by supernatants both from steroid-
treated mixed mononuclear cultures and from steroid-
treated monocyte cultures. The monocyte, therefore, is the
cell responsible for this effect, and the lymphocyte is not
involved.

### Table I Stimulation of polymorph migration by super-
natants of various steroid-treated leucocyte cultures

<table>
<thead>
<tr>
<th>Steroid-treated culture supernatants</th>
<th>Percentage stimulation of migration ± SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed mononuclear leucocytes*</td>
<td>44 ± 3-46</td>
</tr>
<tr>
<td>Monocytes</td>
<td>36 ± 4-17</td>
</tr>
</tbody>
</table>
| Mixed mononuclear leucocytes† Lym-
hocytes                            | 34 ± 4-13                                 |
| Hydrocortisone alone                | 6 ± 2-59                                  |

* Cultured as controls for monocytes,
† Cultured as controls for lymphocytes.

The polymorph migration stimulator was produced principally by glucocorticoids, prednisolone being more
potent, and corticosterone less potent than hydrocortisone.

Table II Effect of various steroids on the production of
polymorph migration stimulator

<table>
<thead>
<tr>
<th>Steroid-treated culture supernatant</th>
<th>Percentage stimulation of migration ± SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucocorticoids (10 μg/ml)</td>
<td></td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>62 ± 1-06</td>
</tr>
<tr>
<td>Prednisolone</td>
<td>79 ± 1-91</td>
</tr>
<tr>
<td>Corticosterone</td>
<td>30 ± 0-77</td>
</tr>
<tr>
<td>Mineralocorticoids (10 μg/ml)</td>
<td></td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>34 ± 0-89</td>
</tr>
<tr>
<td>Aldosterone</td>
<td>11 ± 0-35</td>
</tr>
<tr>
<td>Desoxycorticosterone (DOC)</td>
<td>-5 ± 0-16</td>
</tr>
<tr>
<td>Sex steroids (10 μg/ml)</td>
<td></td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>44 ± 1-16</td>
</tr>
<tr>
<td>Progesterone</td>
<td>5 ± 0-13</td>
</tr>
<tr>
<td>Oestradiol</td>
<td>8 ± 0-25</td>
</tr>
<tr>
<td>Testosterone</td>
<td>3 ± 0-14</td>
</tr>
</tbody>
</table>

The polymorph migration stimulator was produced
principally by glucocorticoids, prednisolone being more
potent, and corticosterone less potent than hydrocortisone.

Monocytes also produce a substance known as colony-
stimulating factor which stimulates in vitro growth of
granulocytes. This factor may be a physiological mediator
of granulopoiesis in vivo and may be related to the poly-
morph migration stimulator described above. In support
of such a relationship, corticosteroid administration in
man is known to induce a peripheral blood leucocytosis
which is accompanied by a rapid disappearance of mono-
cytes from the circulation.

It is postulated, therefore, that polymorph production
and subsequent kinetic behaviour may be controlled by
the monocyte under the influence of the glucocortico-
steroid hormones of the adrenal cortex.

Raised levels of complement inactivation products in
ankylosing spondylitis. By R. D. Sturrock, A. J. Barret,
J. Versey, and P. Renholds (Departments of Rheuma-
tology, Haematology, and Chemical Pathology, Westminster
Hospital, Dean Ryle Street, London, S.W.1)

Activation of the complement system and utilization of
complement is associated with the production of smaller
fragments known as complement inactivation products.
Versey, Hobbs, and Holt (1973) have reported raised levels
of C3 and C4 inactivation products in rheumatoid arthritis
and noted some correlation with disease activity. Using a
semi-automated two-dimensional immunoelectrophoretic
method previously described (Versey, 1971), C3 and C4
levels and their inactivation products were measured in
31 patients with ankylosing spondylitis and 21 patients
with osteoarthritis. Raised levels of C3 and C4 inactiva-
tion products were detected in 19 patients (61%) with
ankylosing spondylitis and in only 2 patients (9-5%) with
osteoarthritis ($\chi^2 = 13-9; P < 0-01$). The highest levels
of C3 and C4 inactivation products were found in spondylitics
with severe disease but there was no correlation with the
ESR level. There was a wide range of total C3 and C4
levels in both groups of patients with the mean C4 level
being higher in the spondylitic group.

The presence of raised complement inactivation
Proceedings: Stimulation of polymorph migration by a factor produced by steroid-treated monocytes.
R D Stevenson

*Ann Rheum Dis* 1975 34: 202
doi: 10.1136/ard.34.2.202-a

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