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 difference 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

ROBIN, J. A., TOLCHIN, S., AND RODNAN, G. P. (1973) *Arthr. and 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 monocytes, and the present study was undertaken to determine the relative roles of these difference cell types.

As shown in Table I polymorph migration was stimulated 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 supernatants of various steroid-treated leucocyte cultures*

Steroid-treated culture supernatants	Percentage stimulation of migration $\pm$ SEM
Mixed mononuclear leucocytes*	44 $\pm$ 3.46
Monocytes	36 $\pm$ 4.17
Mixed mononuclear leucocytes†	34 $\pm$ 4.13
Lymphocytes	6 $\pm$ 2.59
Hydrocortisone alone	7 $\pm$ 1.47

* Cultured as controls for monocytes.

† Cultured as controls for lymphocytes.

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

Steroid-treated culture supernatant	Percentage stimulation of migration $\pm$ SEM
Glucocorticoids (10 μ g/ml)	
Hydrocortisone	62 $\pm$ 1.06
Prednisolone	79 $\pm$ 1.81
Corticosterone	30 $\pm$ 0.77
Mineralocorticoids (10 μ g/ml)	
Hydrocortisone	34 $\pm$ 0.89
Aldosterone	11 $\pm$ 0.35
Desoxycorticosterone (DOC)	-5 $\pm$ 0.16
Sex steroids (10 μ g/ml)	
Hydrocortisone	44 $\pm$ 1.16
Progesterone	5 $\pm$ 0.13
Oestradiol	8 $\pm$ 0.25
Testosterone	3 $\pm$ 0.14

The polymorph migration stimulator was produced principally by glucocorticoids, prednisolone being more potent, and corticosterone less potent than hydrocortisone. Of the mineralocorticoids, aldosterone stimulated migration to a minor degree, whereas desoxycorticosterone was inactive, as were the sex steroids (Table II).

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 polymorph migration stimulator described above. In support of such a relationship, corticosteroid administration to man is known to induce a peripheral blood leucocytosis which is accompanied by a rapid disappearance of monocytes 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 glucocorticosteroid 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. RENNOLDS (*Departments of Rheumatology, 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 semiautomated 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 inactivation 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