

It is concluded that osteoporosis is a generalized phenomenon in rheumatoid arthritis, relating more to the duration of the arthritis than to the presence of treatment with corticosteroid therapy.

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**Serum Uric Acid—Its Relationship to Lean Body Mass, Sex, Plasma Urea, Intracellular Potassium and Packed Cell Volume in a Normal Population Group.** A. C. KENNEDY, J. BRENNAN, J. ANDERSON, P. BROOKS, W. W. BUCHANAN, AND W. C. DICK (*The Centre for Rheumatic Diseases, the University Department of Medicine, Royal Infirmary, Glasgow, and the Department of Biomathematics, Oxford*)  
Fifty-seven normal healthy subjects were studied of whom 30 were female (mean age 27.6 years  $\pm$  1.87, SEM, range 18–52 years) and 27 were male (mean age 29.7 years  $\pm$  1.9 SEM, range 21–57 years). Each subject was receiving a normal solid and fluid diet and none had taken alcohol or any drug within 24 hours of this study. Height, (cm) and weight (kg) were established and a sample of serum obtained for uric acid estimation. Total body potassium (TBK) was measured in each subject using a mobile whole body monitor with a sodium iodide detector and shadow shield protection (Boddy and others, 1971). Lean body mass (LBM) was derived from the formula of Hume and Weyers (1971) and also from the TBK content (Boddy, and others, 1972).

In 14 male and 11 female subjects a further sample of venous blood was obtained for the determination of plasma potassium, intrared cell potassium, packed cell volume, and urea. A regression analysis (Table) of Serum uric acid upon each of these parameters showed no relationship to plasma or intrared cell potassium or to packed cell volume but a significant ( $P < 0.001$ ) relationship to height, weight (whether derived from TBK or Hume-Weyers formula), and plasma urea. The most marked relationship, however, was to sex and the results of a further regression analysis with adjustment for sex gave evidence that the concentration of serum uric acid is influenced predominantly by the sex of the subject but that a series of secondary factors contribute and summate within either the female or male group.

The most striking results from this study which has not to our knowledge been reported previously is the relationship between serum uric acid and plasma urea. A result which invites a great deal of interesting speculation.

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**Assessment of Activity in SLE: A Clinical and Serological Study.** J. P. EDMONDS, C. BRUNEAU, AND G. R. V. HUGHES (*Department of Medicine, Royal Postgraduate Medical School, London W12*)

The entity of SLE may consist of groups of patients with distinct disease patterns in which involvement is limited to certain systems. To investigate this possibility, 20 patients were admitted for a 48-hour period for full clinical and laboratory assessment, including renal and respiratory function, EEG, and fluorescein retinal angiography. 19 patients were female and the average age was 33 years. Four patients did not fulfil the ARA criteria for the diagnosis of SLE.

The frequency of disease manifestations was similar to that reported by Dubois with the exception of renal involvement which occurred in only 25% of our group. While only one of the 20 patients had over 3.5 g proteinuria, 6 had proteinuria of  $>0.5$  g daily, urinary red cells or a creatinine clearance of  $<60$  ml/min. Five of the 6 patients on whom a renal biopsy was performed showed changes on light microscopy. Nine patients had respiratory symptoms at the time of the study but respiratory function tests were abnormal in 16, the most common abnormality being diffusion and restrictive defects. Three patients had central nervous system symptoms when studied and a further 5 had previously been symptomatic: of these 8 patients, 6 had severe headaches, 5 had an abnormal EEG, and 6 showed leakage of dye on fluorescein angiography; none had an abnormal brain scan. Of 11 patients without apparent CNS involvement, one had headache and 2 had an abnormal EEG and leakage of dye on fluorescein angiography. Twelve patients were considered to have active lupus: their mean DNA binding capacity was 70% (normal 0–30%) with a mean serum C3 level of 67% (normal  $>70\%$ ); of the 8 patients with inactive disease the mean DNA binding capacity was 67% and the mean

**Table** Separate regressions of uric acid

Independent variable	Slope $\beta$	SE ( $\beta$ )	df	t	P
Height (cm)	0.064	0.016	55	3.93	$<0.001$
Weight (kg)	0.047	0.013	55	3.77	$<0.001$
Sex	1.898	0.222	55	8.50	$<0.001$
LBM	0.113	0.018	55	6.34	$<0.001$
TBK	0.027	0.005	55	5.93	$<0.001$
Ht, wt, age K (predicted)	0.029	0.005	55	5.78	$<0.001$
Ht, age K (predicted)	0.028	0.005	55	5.22	$<0.001$
Ht, wt, LBM (Hume-Weyers formula)	0.095	0.016	55	6.06	$<0.001$
Urea	0.087	0.021	55	4.17	$<0.001$
Plasma K	0.372	0.446	55	0.83	NS
Intracellular K (male)	0.068	0.095	12	0.72	NS
Intracellular K (female)	0.002	0.061	9	0.04	NS
Packed cell vol (male)	0.227	0.119	12	1.92	NS
Packed cell vol (female)	0.054	0.116	9	0.47	NS