

The diagnosis of the classical form of the disease is applied to those patients in whom 7 out of the 11 criteria listed by the A.R.A. are present. A diagnosis of "definite" requires the presence of five of the criteria. Phenylbutazone, 100 mg. three times a day, was given to 13 patients in the first month, and indomethacin, 25 mg. three times a day, to 13, therapy being changed to the other agent at the end of the month. To provide double-blind conditions they received active indomethacin and dummy phenylbutazone in one month, and in the other active phenylbutazone and dummy indomethacin. The group who started on indomethacin had a mean age of 47.6 years; five were males and eight females. The mean duration of disease was 6.7 years. The patients who received phenylbutazone in the first month had a mean age of 48.8 years, an average length of history of 6.2 years, and there were four males and nine females. There were six patients with classical and seven with definite rheumatoid arthritis in each group. These patients were assessed by their own daily record of pain, stiffness, and loosening-up time, and the measurement of joint tenderness, joint swelling, and grip strength at each visit (Hart and Boardman, 1963). All were attending the outpatient clinic at monthly intervals. They were assessed at the start of treatment and at the end of each trial period of 28 days. Their personal opinion as to the more satisfactory treatment period was recorded at the end of the trial.

RESULTS

When asked at the end of the trial, before the identification of the specific treatment periods, which month was the more satisfactory, 15 patients preferred phenylbutazone, 10 found them to be equally effective, and one preferred indomethacin. This difference is statistically significant ($P < 0.001$).

A comparison of the pain record of each patient in the month on phenylbutazone with that of those on indomethacin revealed that this parameter improved selectively in five in phenylbutazone and in two on indomethacin, 19 finding no difference. A clinically significant alteration of pain was taken to be 25% or more in the month. Likewise, assuming a 25% difference to be significant, five were less stiff during phenylbutazone therapy and one on indomethacin, 20 finding no detectable difference. There is obviously no significant difference in these symptoms between the two groups.

An alteration in the duration of early-morning stiffness was assumed to be of clinical significance if it exceeded 30 minutes. In the first month, on phenylbutazone, there was improvement in the loosening-up time in seven patients and deterioration in one, five being unchanged. On indomethacin there was improvement in three, deterioration in four, and no change in six. These changes are not statistically significant ($X^2 = 1.4$; $n = 1$; $0.3 > P > 0.2$). In the second month, on indomethacin, improvement occurred in three patients, and this parameter worsened in two, eight exhibiting no change. On phenylbutazone there was no change in six, four improved, and three deteriorated.

A difference in grip strength of 50 mm. of mercury was assumed to be clinically significant. In the first month, on phenylbutazone, none improved, five deteriorated, and eight remained unchanged. On indomethacin three improved, one deteriorated, and there was no change in nine. There was no statistically significant difference between the groups ($X^2 = 1.5$; $n = 1$; $0.3 > P > 0.2$). In the second month, on indomethacin, 11 patients remained unchanged, one improving, and one deteriorating. In comparison, on phenylbutazone, there was no change in 10 patients, improvement occurring in three. There was obviously no significant difference.

As 17 of the 26 patients had no tender joints at any time during the trial this was an unsatisfactory parameter.

Assuming a change of three ring sizes in joint size to be significant, there was no difference in 17 patients, five were better on indomethacin, and four on phenylbutazone. The improvement in joint size, in the first month, in the patients on phenylbutazone, was by four rings. On indomethacin the improvement was by 35 rings. This difference is not statistically significant ($t = 1$; $n = 24$; $0.2 > P > 0.1$). In the second month indomethacin was associated with an improvement of 21 ring sizes, compared with 17 on phenylbutazone.

II. LONG-TERM STUDIES

Ninety-seven out-patients and 21 in-patients with classical or definite rheumatoid arthritis, osteoarthritis, and ankylosing spondylitis were treated with indomethacin. In some cases it was possible to compare results with those previously obtained with pyrazole derivatives.