THE ORAL PENICILLINS IN CLINICAL PRACTICE.

A RE-ASSESSMENT

from

THE LITERATURE, LABORATORY AND CLINICAL PRACTICE.

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INTRODUCTION.

The organic acid benzyl penicillin is established today as the antibiotic of choice in streptococcal, neisserian, clostridial and treponemal infections, even though 23 years have passed since Florey and his co-workers first introduced it to clinical medicine in 1941. In the field of oral therapy the new oral semi-synthetic penicillins are supplementing older forms of oral benzyl penicillin in the treatment and prophylaxis of streptococcal infections and their concomitants, as well as bringing such organisms as antibiotic resistant staphylococci under control. In addition, an oral broad spectrum member is of use in the Gram negative bacillary infections. One problem is that some people show hypersensitivity to the penicillins, but at present this is not a serious obstacle to their general usefulness.

The year 1958 saw the isolation of the penicillin nucleus 6 amino penicillinamic acid, and the production of large numbers of new penicillins and their analogues. So many were tested and placed in the hands of the medical profession that much confusion has resulted as to their relative merits. Not only this, but the high pressure tactics of many drug detailers have caused numerous doctors to prescribe the newest penicillin just because it has been
the latest produced and recommended by the pharmaceutical company.

An acceptable choice of oral penicillins cannot just depend upon the detailer's information about limited artificial experiments on volunteers, nor on the results of intelligent guesses so often employed in general practice; it must depend on a correlation of the clinical situation and response observed in practice with the findings of laboratory tests.

Garrod (1960a) has well said that "antibiotics have forced the clinician to think in bacteriological terms, and those who have best adapted their way of thinking have been most successful in the use of these drugs". Bacteriological control at the present time involves the reception of suitable specimens for culture and sensitivity testing, a knowledge of pharmacological data on penicillin absorption, excretion and in vitro antimicrobial activities, and a final interpretation of body fluid assays, correlated with the clinical response. In certain cases today, such as serious infections with resistant staphylococci, bacteriological control has in fact become a logical obligation - the more so because some of the new penicillins show a marked specificity for these resistant organisms.
And yet, reviewing the literature, we find many differences in opinion concerning the penicillins. There is doubt as to the meaning of fairly wide variations in assay levels, disturbing reports of non-absorbers on oral therapy, uncertainty as to the efficacy of intermittent therapy, and some inability to correlate in vitro tests with in vivo situations. When one considers clinical trials of the various penicillins, the comparisons are difficult to conduct and control adequately, and interpretations may be quite invalid. The efficacy of an antibiotic in some sickness may be quite uncertain, the body defences being often overlooked - although memories of long drawn out serious infections, before the days of antibiotics, leave no real doubt about their efficacy in general.

Rollo and Burley (1962), after comparing three of the oral phenoxypenicillins in volunteers, conclude "the final assessment of the penicillins can be made only after an extended period of use and observation in clinical practice, especially as laboratory methods cannot determine with certainty the influence of such factors in the individual as distribution in the body and inactivation due to serum binding or to breakdown".

In view of this uncertainty I wish to gather the oral penicillins together as one subject and present the following thesis: "A Re-assessment of the Oral Penicillins in Clinical
Practice. This will include a critical review of the literature with the re-testing of many laboratory claims, a checking of the statements of pharmaceutical companies, and a presentation with interpretation of a large number of penicillin assays and therapeutic responses, conducted from clinical cases over a two year period. The final aim is to foster a logical use of laboratory services, and to add further to the knowledge of penicillin therapy.