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Clinical evaluation of two strategies for improving patient recall of prior drug therapy

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The ability to recall details of current and prior drug therapy was evaluated in two studies employing a total of 94 patients with inflammatory polyarthritis. Ten per cent of patients were unable to completely recall the names of their current anti-inflammatory drugs and eighty-three per cent of patients to completely recall the details of prior anti-inflammatory drug therapy. Prompting firstly with the proprietary names of drugs and thereafter with a pill board substantially enhanced recall particularly for prior NSAID therapy. Nineteen per cent of responses obtained with verbal prompting were inaccurate. No such problems were encountered in responses obtained using the pill board. These findings indicate that a complete and accurate drug history can only be obtained in the majority of patients using recall enhancement strategies.

Keywords drug history recall arthritis pill board

Introduction

The practising rheumatologist is frequently confronted by patients with musculoskeletal complaints of several years duration who have previously received numerous anti-inflammatory agents. Since therapeutic decision making is based on knowledge of the patient's response to, and tolerance of, current as well as prior therapy, names of the actual drugs prescribed as well as the dosages and durations of administration employed are of key importance. The difficulty of obtaining an adequate drug history has been the subject of several previous reports (Biron, 1977; Caranasos, 1980; Joubert *et al.*, 1977; Ley *et al.*, 1976; Spilker, 1978). In particular, it has been noted that the patient's drug history, even when elicited, may be inaccurate. Thus in one series, 29% of the subjects having detectable amounts of paracetamol or aspirin in their urine simultaneously denied recent ingestion of these agents (Joubert *et al.*, 1977). Biron has drawn attention to the similarity in appearance between certain pills (chromoconfusion) and the difficulty in differentiating between numerous pills collectively termed unidentified round objects or UROs (Biron, 1977). Finally it has been recognized that outpatients have difficulty recalling information even when questioned immediately after leaving the physician's office. Thus Joyce *et al.* (1969) demonstrated a 50% decay in knowledge which was acquired minutes earlier. In their study anxiety, prognosis and the complexity of information imparted appeared to affect the patient's capacity to recall this new information. By a process of categorization, Ley *et al.* (1973) enhanced information recall from an average of 50% to an average of 63%. The current studies were designed to assess the degree and accuracy of recall of current and prior oral anti-

inflammatory therapy by patients with chronic inflammatory polyarthritis and to evaluate the effectiveness of two strategies for enhancing recall.

Methods

In the first study (Study A), 63 patients with classic or definite rheumatoid arthritis and six patients with seronegative polyarthritis were interviewed using a pre-tested questionnaire. Interviewers asked patients the names of their current oral anti-inflammatory drugs and thereafter the names of any anti-inflammatory agents which had been prescribed in the past for their arthritis. When voluntary responses had been exhausted, patients were prompted using two different strategies: (a) with the proprietary names of oral anti-inflammatory agents available in Canada at the time of study and thereafter (b) by the presentation of a visual display of the same medications. The pill board contained in separate wells the following medications: Entrophen (enteric coated acetyl salicylic acid), 325 mg, 650 mg, 975 mg; Novasen (enteric coated acetyl salicylic acid), 325 mg, 650 mg; Feldene (piroxicam), 10 mg, 20 mg; Naprosyn (naproxen), 125 mg, 250 mg; Motrin (ibuprofen), 200 mg, 300 mg, 400 mg, 600 mg; Voltaren (diclofenac), 25 mg, 50 mg; Tolectin (Tolmetin), 200 mg, 400 mg; Clinoril (sulindac), 150 mg, 200 mg; Indocid (indomethacin), 25 mg, 50 mg, 75 mg; Orudis (ketoprofen), 50 mg; Nalfon (fenoprofen), 300 mg, 600 mg; Butazolidin (phenylbutazone) 100 mg; Cuprimine (D-penicillamine), 125 mg, 250 mg; and prednisone, 1 mg, 5 mg. It was recognized that some patients may have been mistaken in their recall due to either a poor memory or misidentification. Therefore in as many cases as possible an extensive examination of patients' medical records was performed in order to assess the accuracy of their response.

In the second study (Study B), performance of the pill board was further evaluated in a group of 25 consecutive out-patients with inflammatory polyarthritis. The interviewer tested each patient's spontaneous recall of prior oral anti-inflammatory drug therapy and then proceeded directly from the voluntary responses obtained to pill identification using the board (i.e. verbal prompting with proprietary names was omitted). The object of Study B was to assess the value of the pill board in eliciting details of prior drug therapy when used in isolation of other cues. Recall of current therapy was not tested in this study.

Results

In Study A there were 51 female and 18 male patients ranging in age from 29 to 84 years (mean = 55.4) and disease duration from 0.15 to 44 years (mean = 10.3). Fifty-seven patients were receiving a single nonsteroidal anti-inflammatory drug (NSAID). Twelve patients were receiving more than one NSAID of whom six took Indomethacin at bedtime in addition to their other anti-inflammatory drugs. Twenty patients were additionally receiving prednisone, 10 myocrisin and four D-penicillamine.

Seven patients (10%) were unable to spontaneously recall the names of all the anti-inflammatory drugs they were currently taking and 57 patients (83%) were unable to completely recall spontaneously the names of oral anti-inflammatory drugs which they had previously taken (Table 1). Thirty four patients (49%) recalled additional prior therapies when prompted verbally but had no additional recall when subsequently shown the pill board. Ten patients (15%) had no additional recall with verbal prompting but remembered further prior treatments when subsequently shown the pill board. Thirteen patients (19%) recalled additional drugs when prompted verbally and still others when subsequently shown the pill board. The majority of difficulty was encountered when recalling prior NSAID therapy. Thus between

Table 1 Comparison of spontaneous recall *vs* prompted recall for current and prior drug therapy

	Study A (n = *69*)	*Study B* (n = *25*)
Spontaneous recall	n (%)	n (%)
Current therapy	62 (90%)	
Prior therapy	12 (17%)	5 (20%)
Additional (prompted) recall of prior therapy		
After verbal cues (only)	34 (49%)	
After visual cues (only)	10 (15%)	20 (80%)
After both visual and verbal cues	13 (19%)	

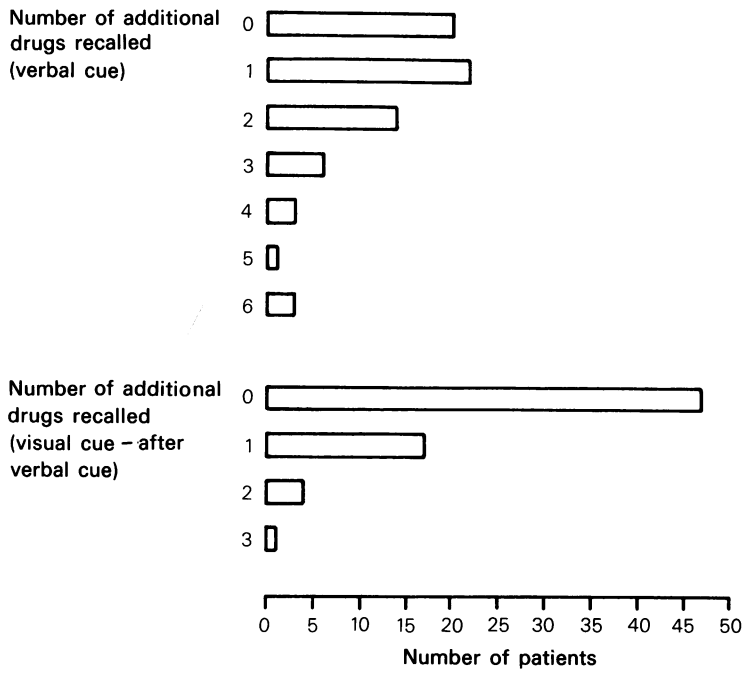

Figure 1 Magnitude of recall enhancement for nonsteroidal anti-inflammatory drugs in study A.

one and six additional drugs were recalled using verbal prompting and between one and three additional drugs when subsequently using the pill board (Figure 1). In addition, eight patients (12%) failed to recall prior oral corticosteroid therapy and five patients (7%) to recall prior treatment with D-penicillamine without verbal or visual prompting. It was possible to evaluate the accuracy of responses in 32 cases. In 26 cases (81%) responses were entirely accurate, the remaining six patients (19%) being mistaken in their recall of prior therapy on verbal prompting. However, no such errors were encountered on visual prompting.

In Study B, in which 25 patients initially responded to a question regarding prior drug therapy and were then shown the pill board (verbal prompts being omitted), 20 patients (80%) recalled having taken additional oral anti-inflammatory drugs following presentation of the visual cue (Table 1). These patients failed to recall between one and three prior treatments with nonsteroidal anti-inflammatory drugs. In addition one patient failed to recall prior oral corticosteroid therapy.

Discussion

These data indicate that restrictions in patient recall extend into the area of anti-inflammatory drug therapy. Several impediments to the obtainment of an accurate drug history have been identified (Biron, 1977; Joubert *et al.*, 1977; Joyce *et al.*, 1973). While the frequency and magnitude of recall failure for prior drug therapy is substantial, the inability of 10% of patients to recall details of their current treatment programme is perhaps more concerning. Since patients who were unable to communicate in the English language were excluded from this study, the prevalence of the problem is likely greater than the estimated 10%. Verbal prompting whilst substantially enhancing patient recall was attended by a 19% inaccuracy rate in responses and in this respect proved to be the less effective of the two strategies. These errors were likely the result of poor memory, over zealous attempts on the part of the patient to assist the physician in obtaining the history or genuine confusion between the names of similar sounding compounds (e.g. Inderal and Indocid). Since the pill board was relatively unconstrained by these perceptive problems it proved to be the more valuable strategy even when no significant linguistic barriers existed.

Assuming that these patients are typical of others with inflammatory arthritis, it is evident that the major problem is in the recall of prior nonsteroidal anti-inflammatory drug therapy and that as many as six prior drugs of this type may be forgotten by the patient unless the

physician provides appropriate visual and/or verbal cues. This problem is further underscored by the inability of significant numbers of patients to recall prior treatment with oral corticosteroid or D-penicillamine therapy. The high degree of mobility in some European and North American populations and the relatively common movement of patients between different medical practices in some countries frequently results in the attending physician's knowledge of a patient's prior drug therapy being dependent on that patient's ability to remember accurate details of anti-inflammatory agents which may have been taken months if not years earlier. While drug cards potentially provide the optimal solution to this problem, experience indicates that patients may fail to bring their cards with them to the clinic at the time of referral or alternately that the data on such cards may be incomplete. Furthermore patients frequently fail to bring their current medications to clinic and in those 10% who cannot recall the names of their present drugs, the physician is heavily reliant on his ability to enhance the patient's recall. For these reasons, alternate strategies for eliciting the drug history are required. As demonstrated in Study A, information recall is maximal when both verbal and visual strategies are simultaneously employed. We have found the pill board a particularly useful adjunct to history taking. It avoids linguistic barriers, circumvents the problem of poor memory and is both efficient and accurate.

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