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Can Your Arthritis Patients Get To The Tablets?

A study of medicine bottle opening

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Introduction

There has been increasing interest recently in the presentation and packaging of drugs for elderly patients and the manufacture of child-proof containers. This had led to the development of specially designed bottles or blister packs now commonly used for over the counter analgesic preparations. Rheumatoid arthritis and osteoarthritis are common diseases and many patients suffering from these diseases develop considerable deformities of the hand leading to an inability to perform activities of daily living. In a previous study (Mason, et al, (1) 200 patients with rheumatoid arthritis were shown to have difficulty in opening child-proof containers. In this study we decided to include patients with osteoarthritis as well and to test the ability of both rheumatoid and osteoarthritic patients to open blister packs as well as child-proof containers.

Materials and Methods

96 patients attending the Outpatient Clinic at Flinders Medical Centre or Daw Park Repatriation Hospital took part in the study. All patients had definite or classical rheumatoid arthritis according to the diagnostic criteria of the American rheumatism Association (Ropes et al, (959),(2) or had primary osteoarthritis with Heberden's and Bouchard's nodes. There were 61 patients with rheumatoid arthritis and 35 patients with osteoarthritis. The mean age of the patients was 61 years and there were 54 females and 42 males.

Five containers all empty and unlabelled (except for the foil) were studied. The five containers investigated are as seen in Figure 1 and include SRA (Boots), Ferrogradumets (Abbotts), Child-proof dispensing bottle 90 mls (ACI), RGH Daw Park dispensing bottle 90 mls (ACI) and Capadex in foil (Fawns and McAllan). Containers were presented to the patient in a random order and the time taken to open each of the containers was measured accurately on a stop-watch. Ferrogradumet containers also included instructions on the bottle and the patient was asked to read these aloud. Patients who deviated from what was actually written in any way were deemed unable to read the instructions accurately. Patients unable to open a particular container or taking longer than one minute were given instruction in how he or she might open the container. Approximately fifteen minutes later the patient was re-tested and timed again. A functional index was performed using a modification of the method of Lee et al. (3)

Results

The mean time for rheumatoid and osteoarthritic patients to open each container is seen in the Table. It can be seen that all but one of the patients were able to open the screw-cap container. 90% were able to remove the Capadex capsules from the blister pack and approximately two-thirds of the patients were able to open each of the child-proof containers without instruction. 90% of patients regularly took one or more medications from the containers. 25% of patients were not able to read the instructions displayed on the three child-proof containers, a small proportion because they were not wearing their reading glasses.

Approximately 40% of patients did not read the instructions for opening the child-proof containers and this appeared to be a major reason for inability to open containers, particularly in these patients who were not severely disabled. Of those people who did read the instructions, 84% were able to open the container concerned whereas 41% of the people who did not read instructions were able to open the container.

A functional index questionnaire was performed to establish and measure arthritis disability according to a modification of the method of Lee et al.(3) Only those questions which directly related to hand and finger function were asked. Patients could score between 0 (not disabled) and 40 (severely disabled). The Table shows the relationship between the percentage of patients opening each bottle in

less than one minute and the functional index. Patients who were unable to open a container or took longer than one minute to open a container were instructed on how they might open the container. In all, 480 tests were performed and 108 instructions were necessary. 60% of these instructions were successful in that the patient was able to open the container relatively easily, usually within 20 seconds. 86% of patients with a functional index of less than 10 could be taught to open a container, whereas only 53% of the patients with a functional index of greater than 10 could be taught to open the containers. Overall very few patients entered into the study were ultimately unable to open child-proof containers after instruction.

Whilst child-proof containers to reduce the incidence of poisoning in children are important (4), special consideration must be given to severely handicapped people requiring medication. Although more than two-thirds of patients could open the containers some major areas of difficulty appear.

Percentage of patients opening each container, mean time taken and relationship to functional index

Container	% of patients able to open bottle in < 1 minute	Mean time taken (secs) ± standard error
SRA (sustained release aspirin)	68	32 ± 3.76
Ferrogradumet	70	21 ± 2.00
Flip-Top	65	24 ± 2.84
Screw-Cap	98	5 ± 0.34
Blister Pack	92	12 ± 1.38

Functional Index (Lee et al)	% of patients able to open all containers
<6	88
6<13	83
7<13	53

These were the extent of the patient's arthritic disease, the patient's ability to read the instructions and the patient's not reading the instructions. Perhaps more consideration should be given to these people when child-proof containers are designed. In particular it appears necessary to use large print for the instructions on the containers. Obviously the less complex the instructions and manoeuvres required, the easier for the handicapped patients. The SRA container and the flip-top containers often posed problems to the patients because they could not understand what was required of them. Overall very few patients entered into the study were ultimately unable to open the child-proof containers after instruction. It would appear that the main reason for an unsuccessful outcome of instruction was physical inability rather than inability to comprehend the necessary manoeuvres. We wish to alert the Medical and Pharmaceutical profession to the difficulties some patients may experience with these containers. We would suggest the Medical profession make sure they are aware of the arthritic patient's abilities to open these containers, making special note on any prescription ordered if they feel the patient has difficulty. Pharmacists should be willing to counsel patients on the use of these containers and supply screw-capped containers when necessary.

References

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