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Self-injection of gold and methotrexate.

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Correspondence

INSTRUCTIONS FOR LETTERS TO THE EDITOR

Editorial comment in the form of a Letter to the Editor is invited; however, it should not exceed 800 words, with a maximum of 10 references and no more than 2 figures or tables and no subdivision for an Abstract, Methods, or Results. Letters should have no more than 3 authors. Full name(s) and address of the author(s) should accompany the letter as well as the telephone number and fax number (if available). Financial associations or other possible conflicts of interest should always be disclosed. To expedite receipt of letters, we encourage authors outside Canada to communicate by fax (416-967-7556).

Self-Injection of Gold and Methotrexate

To the Editor:

We read with interest the paper by Arthur, *et al*[1] and the correspondence relating to it[2]. We recently completed a small, pragmatic study to compare the safety and efficacy of methotrexate (MTX) administered by 2 different routes, intramuscular (im) and subcutaneous (sc), and to teach patients to self-administer MTX by the subcutaneous route. A literature search produced little evidence about the bioavailability of MTX between the 2 parenteral routes[3,4] and nothing relating to the safety of patient administration. We recognized that there could be potential advantages in terms of convenience, cost, and active patient involvement.

Eight patients receiving a stable weekly dose of intramuscular MTX, who attended the nurse specialist clinics, were invited to participate in the study. Of the 8 participants, 6 were female and 2 were male. The mean age was 43 years (range 36–58). Four had rheumatoid arthritis, 2 psoriatic arthritis, one Wegener's granulomatosis, and one polymyositis. The mean disease duration was 11 years 4 months.

The study was undertaken over 13 weeks. At week 1 variables of disease activity were measured. The nurse specialists administered weekly im MTX at weeks 1 to 3. Serum levels of MTX were measured 1 h after the 3 injections. At week 4 the route of administration was switched to subcutaneous. The nurse specialists administered weekly sc MTX at weeks 4 to 6. Serum levels of MTX were measured 1 h after these. Patients were taught during this phase by practical demonstration and with the addition of written information. For weeks 7 to 9 patients administered their own MTX by sc injection under the supervision of the nurse specialists. At week 9 patients were discharged to self-administer the injections at home. They were provided with pre-drawn syringes, gloves, needles, swabs, sharps disposal boxes, and spillage kits. They had the backup facility of the rheumatology nurses' telephone help-line.

The participants self-administered the MTX at home for weeks 10 to 12. At week 13 they returned to the nurse specialist clinic. At this visit variables of disease activity and patient satisfaction were assessed. Safety monitoring was undertaken for MTX therapy and patients were observed administering their own injections to ensure that their technique was still correct. Used sharps boxes were returned and new supplies were provided. A further appointment for one month was given.

The results from this study have shown that there was no significant difference between sc and im MTX. Individual patients had serum levels of MTX that ranged from 0.34–1.56 mm/l. There was no significant difference in respect of pain, fatigue, early morning stiffness, and tender joints. Erythrocyte sedimentation rate and C-reactive protein levels fluctuated slightly as would normally occur. No difficulties were encountered with self-administration. One patient experienced a transient local reaction around the injection site. All participants were satisfied with the teaching procedure. Patients preferred the sc route of administration as it was less painful and permitted them to self-inject.

It would appear that self-administration of sc MTX is a safe and effective procedure for patients with reasonable dexterity. As a result of this study, we have changed our practice with the development and adoption of a new protocol. Patients are given MTX by the sc route rather than the im, those that are willing are taught to self-administer and encouraged to undertake this procedure at home. Weekly hospital visits have been reduced to monthly with benefit to patients in terms of cost, time, and convenience.

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REFERENCES

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3. Brookes PJ, Spruill WJ, Prish RC, Birchmore DA. Pharmacokinetics of methotrexate administered by intramuscular and subcutaneous injections in patients with rheumatoid arthritis. Arthritis Rheum 1990;33:91–5.
4. Jundt JW, Browne B, Fiocco GP, Steele AD, Mock DA. A comparison of low dose methotrexate bioavailability: oral solution, oral tablet, subcutaneous and intramuscular dosing. J Rheumatol 1993;20:1845–9.

Dr. Klinkhoff, *et al* reply

To the Editor:

The team from Birmingham are to be commended for piloting a self-injection program for methotrexate (MTX). While 8 patients is a small sample to determine preferences and safety, their conclusions are similar to our own. We have employed a successful self-injection program for gold and MTX for 5 years. Patients are taught either intramuscular or subcutaneous injection technique. We have encountered no serious problems after routine use of self-injection or partner injection for years in more than 100 patients. Because of the high incidence of annoying and potentially dangerous side effects that require close supervision, we have targeted for self-injection education those arthritis patients who are stable taking injectable medication and who have not encountered any potentially serious adverse events over a followup period of 6 months.

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Radiographic Diagnosis of Sacroiliitis — Are Sacroiliac Views Really Better?

To the Editor:

Readers were invited to comment on Figure 1 of page 2713 of the December 1999 issue of *The Journal*[1]. Like Dr. McDuffie we are pretty experienced rheumatologists, but we must admit that we are often in doubt about the diagnosis of sacroiliitis on radiographs. In these cases, like McDuffie, we order a computer tomography (CT) scan. However, we disagree when he writes that