

# Scintigraphic Assessment of Disease Activity in Psoriatic Arthritis with <sup>99m</sup>Tc-labelled Non-specific Polyclonal Human Immunoglobulin G

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Technetium-99m-labelled, non-specific, polyclonal, human immunoglobulin G (<sup>99m</sup>Tc-hIG) is a radiopharmaceutical agent recently proposed for the scintigraphic assessment and measurement of synovitis (1, 2). The aim of this work was to evaluate the usefulness of this tracer to quantify synovial inflammation in psoriatic arthritis.

## MATERIALS AND METHODS

Twenty patients affected by psoriatic arthritis (Moll and Wright criteria) and suffering from clinically active synovitis were studied. The numbers and sites of the involved joints had been assessed previously by clinical examination on the basis of the presence of pain and/or swelling. All the patients underwent scintigraphy of several groups of joints with <sup>99m</sup>Tc-hIG. 4 and 24 h after i.v. administration of the radiopharmaceutical agent, static assessment of the joints had been performed with a large-field-of-view digital gamma camera at the real time of 5 and 15 min, respectively. None of the patients had been taking anti-inflammatory therapy for at least 7 days previously. Radiological examination had been carried out earlier on all of the joints. The scintigraphic images were assessed separately as positive or negative by two specialists who were unaware of each patient's clinical status. Foot and carpal joints were considered as a whole because of the difficulty of distinguishing the individual articular segments. Only the joints deemed positive by both specialists were finally accepted as really being positive.

## RESULTS AND DISCUSSION

The joints included in this study numbered 283. The results of the comparison between clinical examination and scintigraphic studies are shown in Table I.

100% (16/16) of the clinically positive joints had a positive hIG scan and 86% of the clinically negative joints turned out to be negative on the hIG scan. Therefore, whereas 38 clinically negative joints had a positive hIG scan, none of the clinically positive joints was found negative by hIG scanning.

One explanation for these findings could be that hIG scans produce some 'false positive' results; however, this hypothesis admits the possibility of a different phlogistic process at the same articular site. This is rather improbable in such a large number of joints. On the contrary, it is conceivable that clinical examination cannot detect very early lesions and that the disparity between scintigraphic and clinical results could be the

measure of the reliability of the scintigraphy. It has been noted that in psoriatic arthritis, damage tends to occur early in the course of the disease (3), thus the possibility of a scintigraphic assessment of the early lesion could be of great interest.

The comparison with X-ray studies shows that the frequency of hIG scan-positive joints corresponding to clinically negative examination is about the same both in patients with negative X-ray findings (28/38) and in those with minimal and early radiological signs of joint involvement (10/38).

## REFERENCES

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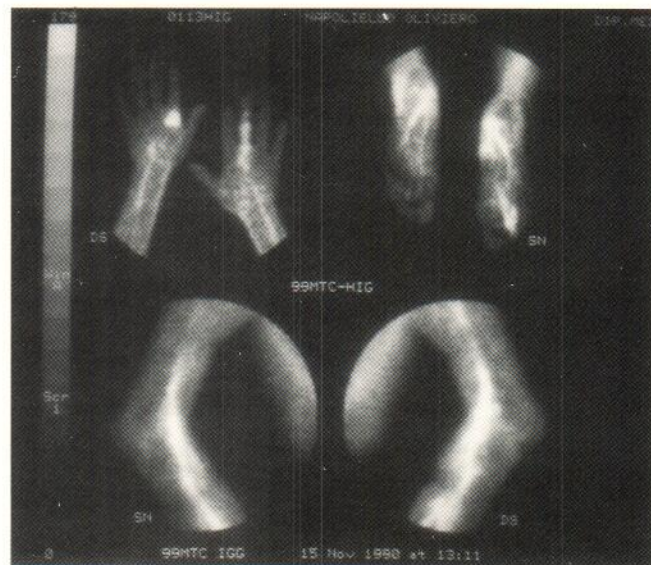


Fig. 1. Patients affected by psoriatic arthritis. <sup>99m</sup>Tc-hIG scan shows involvement of 2nd metacarpophalangeal of the right hand, 3rd metacarpophalangeal and 3rd proximal interphalangeal of the left hand, left forefoot. All of these joints were positive on clinical examination. Left and right knee scan were quite positive, whereas clinical examination of these joints was negative.

Table I. Scintigraphic results

		+	scan	-	n
Clinical Examination	+	16		0	16
	-	38		229	267
	n	54		229	283