

## Utility of $^{99m}\text{Tc}$ dextran scintigraphy in diabetic patients with suspected osteomyelitis of the foot

Ali SARIKAYA,\* A. Cemal AYGIT\*\* and Gökhan PEKİNDİL\*\*\*

\*Department of Nuclear Medicine, Trakya University Medical Faculty, Edirne, Turkey

\*\*Department of Plastic and Reconstructive Surgery, Trakya University Medical Faculty, Edirne, Turkey

\*\*\*Department of Radiology, Trakya University Medical Faculty, Edirne, Turkey

**Purpose:** Osteomyelitis of the foot is a frequent complication of diabetes mellitus and its diagnosis is often difficult. The goal of this study was to demonstrate the utility of  $^{99m}\text{Tc}$  dextran scintigraphy in suspected diabetic foot infections. **Materials and Methods:** Twenty-six patients (20 males, 6 females, age range 18–80 years) with diabetes mellitus who had a total of 36 foot ulcers or necrosis were studied. All the patients underwent both three phase bone scan and  $^{99m}\text{Tc}$  dextran scintigraphy. Final diagnosis was based upon either pathologic examination or clinical follow-up at least four months. **Results:** On bone scan increased uptake was seen in 55 sites, and among these there were 11 lesions of proven osteomyelitis. There were 11 true-positive, 0 false negative, 0 true negative and 44 false positive results for bone scan. The sensitivity, specificity and accuracy of bone scan were 100%, 0% and 20%, respectively. With regard to  $^{99m}\text{Tc}$  dextran scan, nine lesions produced true-positive results with two lesions indicating false negatives resulting in a sensitivity of 82%. Thirty-six true negative and eight false positive results produced a specificity of 82%, and an accuracy 82% from  $^{99m}\text{Tc}$  dextran studies was obtained. Eight false-positive results were possibly due to neuroarthropathy, pressure points and deep penetrating ulcers. A patient with one false-negative result had angiopathy while other had neither neuropathy nor angiopathy. **Conclusions:** According to these results,  $^{99m}\text{Tc}$  dextran scintigraphy seems to be a sensitive and specific diagnostic method, and because of its advantages over other radiopharmaceuticals (shorter preparation time, highly stability *in vivo/in vitro*, early diagnostic imaging and low cost), it may be a radiopharmaceutical of choice for diagnosing in diabetic foot infections.

**Key words:** diabetic foot, infection, scintigraphy,  $^{99m}\text{Tc}$  dextran