

## CLINICAL ROLE OF <sup>99m</sup>Tc-HMPAO-WBC SCINTIGRAPHY IN LOWER LIMB CHRONIC ULCERS

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### BACKGROUND-AIM

Lower limb chronic ulcers are a highly debilitating condition and represent one of the main causes of morbidity, mortality and disability, especially in elderly patients, resulting in prolonged convalescence and heavy social and economic consequences. They affect about 1% of adults and 3.6 % of people over 65 years and generally occur in patients with many comorbidities (diabetes, stroke, hypertension). The only exception is represented by young people with post-traumatic neurological damage. Are at greater risk of developing a chronic injury also diabetic and hypertensive patients, because of the damage to the microcirculation caused by these two diseases and incontinent, especially the elderly, in which the cleansing and the change may decrease the risk of injury. It is believed that in Italy about 30% of those suffering from diabetes for at least 10 years present a form of diabetic neuropathy: 15% of diabetic patients hospitalized, in fact, suffer from ulcers distal. The annual incidence of foot ulcers in the diabetic population is 2.5-10.7%. Several ulcers underlie osteomyelitic (OM) processes, which often lead to ulcer relapse till amputation. Even though early diagnosis and proper treatment of lower limb osteomyelitis can reduce the number of amputations, the diagnosis is often difficult. Bone biopsy is considered the gold standard for the diagnosis of OM, however is an invasive and not always practicable technique. Clinical diagnosis of OM is often difficult and requires integration with several imaging tools.

### METHODS

22 patients (15M, 7F), mean age 56 years, with chronic lower limb infected ulcers not healed, even though treated with antibiotics and medications, by more than six months, were studied with routine <sup>99m</sup>Tc-HMPAO-WBC scanning technique, sometimes integrated by 24-hours SPECT/CT. 9 of them (41%) were diabetic. Ulcers were mostly single, 13 located on lower leg portion, 6 on foot and 3 on fingers. Most infections were polymicrobial or caused by *S. Aureus* methicillin-resistant (MRSA), while other infrequent agents isolated were *Enterococcus*, *Pseudomonas Aeruginosa* and others Gram + Cocci. At diagnosis, PCR was elevated only in 11/22 (50%).

### RESULTS

All patients (22/22, 100%) with evident, pathological uptake of radio-labeled WBC were affected by OM with cutaneous fistula. Besides, among patients with single infected ulcer treated, 6/22 (22%) showed WBC uptake in more septic foci than clinical evaluation, adding fundamental prognostic information and modifying clinical strategy.

### CONCLUSION

<sup>99m</sup>Tc-HMPAO-WBC scintigraphy is a powerful, less-invasive e specific tool in evaluation of lower limb infections, diagnosing osseous underlying infections when present but not evident clinically and shows important incremental value than the one clinical examination in detecting and numerical definition of septic foci.