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## Evaluation of Pulmonary Infection in Rabbits by Tc-99m Hmpao Labeled Leukocyte Scintigraphy

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### Abstract

**Objectives:** Aim of this study was to determine the effectiveness of labeled leukocyte scintigraphy in pulmonary infection of rabbits and effect of increasing the incubation duration in this efficiency.

**Methods:** Five New Zeland white rabbits (5-6 month old, 2.5-3 kg) were subject of this study. The rabbit were divided into three groups (group 1: control, group 2: tracheal inoculation group, group 3: transthoracic inoculation group). The rabbits were inoculated by E. Coli administration one day prior to the scintigraphy in grup 2 and 3 rabbits. The labeled leucocytes scintigraphy was performed to all five rabbits. The images were evaluated by quantification (avarage counts in lungs). The quantitative values were compared by Paired Samples T test and  $p < 0.05$  considered significant.

**Results:** The labeling efficiency was similar in all five rabbits. The avarage counts in the lungs of group 2 were significantly higher than in group 1 and 3. The second rabbit in the group 3 (which had prolonged waiting period in incubation with Tc-99m HMPAO) had avarage counts similar to group 1.

**Conclusion:** The infection imaging by means of labeled leukocyte scintigraphy clearly demonstrates E. Coli pneumonia in rabbits when it is inoculated by transtracheal route and increasing the lenght of incubation with Tc-99m HMPAO with leukocyte do not benefit.

**Key words:** Pneumonia, rabbits, labeled leukocyte, scintigraphy

**Preferred Presentation Type:** Oral presentation

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## Evaluation of Bone or Soft Tissue Infection with Tc-99m Hmpao White Blood Cell Scintigraphy: Semiquantitative Method

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### Abstract

**Objective:** Aim the aim of this study was to investigate semiquantitatively the diagnostic performance of Tc-99m hexamethylpropylene amine oxime labeled white blood cell (Tc-99m HMPAO-WBC) scintigraphy in patients with suspected bone or soft tissue infections.

**Methods:** Material and Method twenty one patients who applied to Nuclear Medicine Departmant (for suspected prosthesis infection, diabetic foot, bone infection, graft infection) were evaluated retrospectively. Tc-99m HMPAO WBC scintigraphy imaging were performed to all patients. Planar images were taken 1., 2., and 4. hours after injecting the labeled leukocytes. Evaluation of infection with Tc-99m HMPAO WBC scintigraphy was done semiquantitatively. Relative uptake was determined by setting the region of interest (ROI) of lesion area on the anterior view. Rectangular ROI was set on the against limb (non-lesion). The ratio of the average pixel count in the lesion (L) to that in the non-lesion (NL) (L/NL ratio) was calculated at 1., 2., and 4. hours images. Final diagnosis was based on histopathology, microbiologic assays, or clinical and imaging follow-up.

**Results:** 0.55 and 1.55±0.74, 1.42±0.55, 1.40±0.55 in positive and control groups, respectively. Positive group revealed a statistically significant increase L/NL values in the data 3 hours images ( $p=0.002$ ). However, no statistically significant was found between L/NL values in 3 hours imaging data in control group ( $p=0.223$ ). All the data in the positive group found