

The role of Tc-99m polyclonal human immunoglobulin G scintigraphy in Graves' ophthalmopathy

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Objective: The aim of this study was to clarify whether Tc-99m HIG (Polyclonal Human Immunoglobulin G) can image and determine the severity of orbital involvement in patients with Graves' ophthalmopathy. **Materials and Methods:** Twenty-six patients between 19 and 56 years old with Graves' ophthalmopathy were examined. All patients received approximately 370 MBq Tc-99m HIG by i.v. injection. Planar and SPECT examination were performed 4 hours after the injection. Visual and semiquantitative evaluations were performed for both orbits by two independent observers. **Results:** Clinically active ophthalmopathy patients had noticeably increased orbital accumulation of Tc-99m HIG. In patients with inactive disease, and 14 of 19 had no uptake, whereas 5 patients had orbital radioactivity accumulation. The duration of Graves' ophthalmopathy did not correlate with the presence of active ophthalmopathy and Tc-99m HIG grade. There was no correlation between clinical classification and clinical activity ($r = 0.278$). There was a good correlation between clinical activity and the radioactivity grade with $r = 0.666$ ($p = 0.01$). The clinical classification closely correlated with Tc-99m HIG grade ($r = 0.423$, $p = 0.05$). **Conclusion:** Tc-99m HIG scan can clearly identify clinically active patients, and subclinical inflammation can be shown by this scintigraphic evaluation. The current preliminary results suggested that Tc-99m HIG SPECT might be useful for the assessment of disease activity in Graves' ophthalmopathy.

Key words: Tc-99m human immunoglobulin G, Graves' ophthalmopathy, radionuclide imaging