

عنوان مقاله:

Bio-distribution study of Tc-^{99m} HMPAO labeled platelet in healthy volunteer

محل انتشار:

مجله پزشکی هسته ای و زیست شناسی آسیا اقیانوسیه، دوره 12، شماره 2 (سال: 1403)

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خلاصه مقاله:

Objective(s): The bio-distribution of Tc-^{99m} HMPAO labeled platelets (LP), which could be used to image subtle thrombosis, is not reported in a human yet, which is the subject of the current study. Method: The platelets were extracted from ۴۹ ml whole blood and labeled with Tc-^{99m} HMPAO, then re-injected to the healthy volunteer. Anterior and posterior whole body imaging was done by a dual-head gamma camera ۳، ۱۸، ۳۳، ۴۶، ۸۱، ۱۲۴، ۱۹۰ min and ۱۵ hours after injection. Also a whole-body SPECT was done at ۱۳۷ min post-injection. The area under the curves of the spleen, liver, left kidney, bladder, right lung, brain, and abdominal aorta ROIs was calculated to estimate the accumulation of labeled platelets within the organs. Results: The spleen was the target organ. The kidneys, liver, and heart were also remarkably visualized. The thyroid, stomach, bladder, or gastrointestinal (GI) uptake/activity was not significant. The stomach visualization was enhanced after ingestion at ۶۰ min. The sagittal and lateral sinuses were delineated, and the background of the brain was very low. During the study, the area under the curve of activity was ۷۳۸، ۳۰۸، ۳۰۲، ۱۹۶، ۲۳۰، ۱۲۱، ۷۹، ۲۱۶، ۵۲۹، ۳۶۹، ۱۶۲، and ۵۴ counts. min/pixel for spleen, liver, heart, right lung, left kidney, right iliac artery, sagittal sinus, thyroid, bladder, stomach, GI, and background, respectively. Conclusion: The quality of the scan with low dose Tc-^{99m} HMPAO LPs is optimal. We documented the bio-distribution of LPs. The optimal imaging time was ۸۰-۱۲۰ min post-injection when the free Tc-^{99m} and GI transit were negligible. The sagittal and lateral sinuses were visualized enabling detection of possible clots in the vessels.

کلمات کلیدی:

Tc-^{99m}-HMPAO labeled platelets scan, human bio-distribution study, sagittal sinus, Lateral sinus

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