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Original Article

Evaluation of Radiolabeled Streptokinase for Thrombosis Imaging

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Abstract:

Introduction: Cardiovascular disease is the major cause of morbidity and mortality in developing and developed countries. Rapid diagnosis of the thrombosis can be an essential step in management of the stroke.

Methods: In this work a recently developed radiolabeled streptokinase (STP) tracer was evaluated in an animal thrombotic model using SPECT imaging and biodistribution studies. Locally labeled [⁶⁷Ga]-Streptokinase was checked by ITLC, HPLC and SDS-PAGE experiments to check the tracer integrity and purity. The biodistribution studies were performed in thrombotic femoral vein of rats using tissue counting and preliminary SPECT studies, respectively (up to 2 h).

Results: [⁶⁷Ga]-Streptokinase prepared with suitable radiochemical purity (HPLC >95%, ITLC >99%) was administered to FeCl₃ induced thrombotic rats and the percentage of injected dose per gram of tissue (ID/g%) as well as the SPECT images demonstrated the good specific binding of the tracer in thrombotic clots located in heart and aorta 2 hours post injection.

Conclusion: [⁶⁷Ga]-DTPA-STP can be a suitable probe for imaging of thrombosis in cardiovascular diseases. Ga-68 labeled STP has the potential to be an alternative superior labeled compound due to positron emission properties for PET studies as well as appropriate physical half life.

Keywords:

[Streptokinase](#) , [Gallium-67](#) , [Thrombosis](#) , [SPECT](#) , [Radiopharmaceuticals](#)

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