

Improved radiopharmaceutical for sentinel lymph node detection

To date, no radiopharmaceuticals are registered for specific use in sentinel lymph node (SLN) detection. The SLN is the node to which the tumor metastasizes primarily. The SLN procedure enables clinicians to stage the patients more accurately, leading to optimal treatment.

In his thesis, Geert Gommans describes the optimization of the procedure in breast cancer using ^{99m}Tc -Nanocoll[®]. In several clinical studies, Gommans and co-workers investigated the effects on the outcome of SLN procedures using various specific concentrations of Nanocoll[®], labelled with ^{99m}Tc that was obtained from a $^{99}\text{Mo}/^{99m}\text{Tc}$ generator at different time points after previous elution. The clinical studies indicate that SLNs accumulate more radioactivity when using Nanocoll[®] particles that were labelled with a high specific concentration of ^{99m}Tc . SLNs also showed enhanced accumulation of radioactivity after injection of Nanocoll labelled with more ^{99m}Tc -atoms per Nanocoll particle. Gommans' thesis addresses a simple and reproducible way to prepare and to apply high specific concentrations of ^{99m}Tc -Nanocoll[®].

The thesis also features a survey that was held among all departments of Nuclear Medicine in the Netherlands, showing the wide variety of methods that are used to perform SLN procedures.

Standardization of the procedure should be implemented in the national directives on breast carcinoma.

The applied radiopharmaceutical should be optimal for SLN detection and should preferably be registered for this purpose.