

ABSTRACT

The use of linens by patients undergoing ablation therapy may lead to contamination by radioactive substances excreted by patients through bodily fluids. Contaminated linens can become a source of radiation exposure for medical personnel and the surrounding environment, necessitating contamination level measurements to ensure safety. This study aimed to measure the contamination levels of linens and analyze the degree of contamination in the I-131 thyroid radioablation isolation rooms. The research procedure involved identifying and measuring linens, including gowns, bed sheets, blankets, pillowcases, and foot mats, from all patients undergoing I-131 thyroid ablation. The measurement results were then visualized and analyzed using Microsoft Excel software. The findings demonstrated that a dosage of 150 mCi resulted in a 19.57% potential for linen contamination, compared to 8.03% at 35 mCi. This indicates a direct relationship between the dosage and the amount of radionuclides excreted by patients, where higher doses increase the likelihood of surface contamination on linens. Additionally, longer isolation durations were found to elevate the accumulation of radioactive particles on linens. Regarding the management of radioactive waste, particularly linens, procedures were carried out in accordance with applicable Standard Operating Procedures (SOPs). Linens with contamination levels exceeding the clearance limit (>10 Bq/g) were managed through radioactive decay procedures based on predetermined release times.

Keywords: *Radioactive waste, Contaminated linens, Iodine-131*