

ABSTRACT

the measurement results of radiation dose rates in patients undergoing radioiodine (I-131) therapy using two instruments: the Ranger survey meter and the Else Easy area monitor. Data collection was conducted at the Nuclear Medicine Installation of Dr. Sardjito General Hospital, Yogyakarta, involving 30 patients on the second and third days after radiofarmaceutical administration. The research method used was descriptive quantitative analysis, including mean values, standard deviation, and percentage error between the two instruments. The results showed that the average radiation dose rate on the second day was 57.66 $\mu\text{Sv}/\text{hour}$ using the Ranger survey meter and 55.80 $\mu\text{Sv}/\text{hour}$ using Else Easy. On the third day, the values decreased to 30.19 $\mu\text{Sv}/\text{hour}$ (Ranger) and 27.97 $\mu\text{Sv}/\text{hour}$ (Else). This decrease was caused by radioactive decay and the excretion of radioiodine from the patient's body. Differences in measurement results between the two instruments were influenced by detector characteristics, instrument sensitivity, and measurement conditions. However, both instruments showed a consistent pattern in describing the decrease in radiation exposure.

Keywords: *I-131, radiation exposure, Ranger survey meter, Else Easy, radiation protection*