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Hemodialysis with Radiation Therapy

Irene B. Castaneda, BSN, RN and Nenita E. Cuellar, BSN, RN, CNN
UT Southwestern Medical Center, Dallas Texas

Background: Thyroid cancer can be treated with radioactive iodine (131-I) for ablation. The end-stage renal disease (ESRD) patient with co-morbidities requiring radiation therapy and hemodialysis (HD) adds a dimension of risk for both the staff and the patient. Therefore, a collaborative inter-professional team was formed by nuclear medicine, nephrology, safety compliance officer, environmental services, department leaders, staff nurses and caregivers.

Problem: How to provide effective HD for an ESRD patient undergoing radioactive ablation of thyroid cancer and promote safety for personnel and the environment?

Methodology: A joint effort of the nephrology and nuclear medicine team created a task force. Pre-planning-Identify two adjacent rooms that can be blocked for patient confinement, minimize exposure. Establish time lines for coordinating patient admission, assessment, lab draws, radiation isotope administration and HD 24 hours later. Provide training for all staff and patient on confinement rules, compliance including care standards, and assignment of radiation badges to personnel. Implementation. Implementation-The floor and equipment in the room were sealed. Once 131-I was administered, safety scan of the patient was performed and caution signs posted on doors. The nurse provided HD, ensured patient's comfort while observing time limits. Post-Dialysis Intervention-Radioisotope levels were still high per safety scan, so confinement extended until the next day and patient was discharged. Room and equipment required decontamination.

Summary: Safe and effective HD treatment can be provided to patients post thyroid cancer ablation. The coordinated efforts of the care team and processes followed in this case study can have implications for innovation in nephrology nursing practice and other unconventional settings.

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