

RADIONUCLIDE THERAPY

Thyroid Carcinoma: given to kill thyroid cells remaining after surgery, treat hyperthyroidism, kill mets.

Patient Prep:

- doses over 30 mCi require hospitalization
- Patients must not be pregnant or breast feeding
- If nursing an infant needs to arrange a way to stay away
- Flushing twice, keep utensils separate, minimize time with others, maximize distance from others
- Patient is fasting before the pill
- When patient is admitted visitors and nursing staff monitored for exposure
- 2mr/hr NRC limit for visitors

1meter = 15 mR/ hr	15mr/hr	2mr/hr	$x=2(60) = 8min$
Time spent with pt?	60m	x	15

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Calculations for discharge:

- when calculated dose remaining drops below 30 mCi patient may be released
- Measurements are taken 3 meters away

Discharge Instructions (NRC regulations)

ASSUMPTION: iodine is excreted for 1 week post discharge

1. Intimate personal contact to be avoided
2. Use separate bathroom if possible
3. Keep eating utensils separate
4. Wash hands often

GIVEN: 100 mCi, and measured 150 mR/hr 150 mR/hr 50mR/hr
 @ 24 hours = 50mR/hr 100mCi x
 can the patient be released?

$x = 33.3$ mCi that patient needs to stay in the hospital

RADIONUCLIDE THERAPY

p-32 (CLEAR)

- used to treat polycythemia vera and control bone pain from mets
- Doses : 1-20 mCi
- Pure beta emitter (shielding: glass and plastics only)
- Make sure right patient, right dose, right isotope, right diagnosis
- Mets and bone pain: larger dose
- Polycythemia vera: smaller dose
- Make sure clear isotope
- Pure beta: no precaution once injected!

Chromic Phosphate p-32 (blue-green)

- intracavity injection only
- Treats tumors found within cavities
- If injected IV, liver uptake will occur with severe damage
- Blue-green color = reminder of route of administration
- Drainage from injection site presents a contamination hazard

RADIONUCLIDE THERAPY

Strontium89

- relieves bone pain from mets
- Method of localization: calcium analog related to bone metabolism. Mets sites will take up more isotope
- Dose is 4.0 mCi
- Depending on response may be given at 3 month intervals
- Pure beta emitter: plastic shielding, no lead
- 2/3 of dose is excreted via urine
- Bathroom needs to stay clean, flushing 3 times
- Flare effect: approximately 2 weeks past injection bone pain worsens. This is an indication that the therapy is working. Sr-89 does not kill mets cells, but ablates nerve endings near mets sites – easing the pain.