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IRIDIUM 192 (Ir-192) DIRTY BOMB: Health Care Information

Ir-192 is a radioactive isotope that is used in medical radiotherapy and in industrial x-ray machines. It may be used as a “dirty bomb” by putting the isotope within a conventional weapon, detonating it and spreading small Ir-192 particles.

Radiation Information: Ir-192 emits both beta and gamma radiation.

Chemical Information: Ir-192 is a solid that may appear as tiny seeds (medical radiotherapy) or metal sticks (industrial gauges and x-ray).

Clinical Information: Ir-192 may cause radiation burns if allowed to be in proximity to skin for a period of time. Ir-192 is poorly absorbed in the lungs and GI tract. The isotope may produce radiation injury or increase the risk of cancer within the GI tract and internal organs as it passes through the GI system. Significant internal contamination is considered unlikely in a dirty bomb scenario.

Diagnosis: Ir-192 may be detected by a Geiger-Muller counter that detects beta or gamma radiation.

Decontamination: Patients with external contamination (e.g., proximity to the blast, directly down-wind from the blast, covered in debris/dust or have detectable radiation contamination by Geiger-Muller counter) should:

1. Remove their clothing (clothing should be bagged).
2. Shower for 2 to 3 minutes with soap and water.

Treatment: Patients with significant internal contamination (e.g., detectable radiation on gastric sample or nasopharyngeal swabs) may require internal decontamination or antidotal therapy. Very few patients are expected to have significant internal contamination after a dirty bomb. GI contamination may be treated with activated charcoal (1 g/kg, up to 50 g PO).