Which isotope is better? Physics point of view

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Ultrasound guided prostate implant have utilized Pd 103 and I 125 isotopes. The choice of the isotope is guided by Gleason score. But due to the shortage of I125 seeds, we have used Pd103 seeds on 8 patients with Gleason score less than 6. Our clinical experience has shown that there is a 75% increased incidence of urinary retention for patients with the same Gleason score and prostate volume but who received Pd103 seeds instead of I125 seeds. This is due to the physics character of the Pd 103. Pd 103 has a lower energy and shorter half life compares to I125. It deliveries dose at a much higher dose rate, this has a potential to increase the acute radiation effects in normal tissue. Pd 103 is more sensitive to the sources placement and prostate edema after the implant due to a lower energy level and higher activity. For patients with a 25% volume increase due to post implant edema, we have seen significantly less coverage - mPD has only a 75% coverage for Pd103 postplans. It is our assertion that I125 is a better isotope for permanent prostate implants.