

Low Dose Radiation Therapy for Treatment of Osteoarthritis and Non-Operable Intractable Knee Pain – Serial Case report

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Introduction

- Low Dose Radiation Therapy (LDRT) has been used for decades in Europe to treat chronic musculoskeletal pain[1]
- Typical treatment for larger joints is a total of 6 Gray, applied .5 to 1 Gray per session, every other day over two weeks
- Mechanism of action involves modulation of inflammatory pathways – affecting macrophages, leukocytes and proinflammatory cytokines[1]

Patient 1

- A 60-year-old male with hypertension and diabetes who suffered from chronic, traumatic bilateral knee OA after a work-related injury, presented to the pain clinic
- Prior treatment included: injections, PT and pain medications with no major relief
- He was recommended to pursue total knee replacements but did not want surgery
- He underwent LDRT, comprised of 50c Gray every other day for a total of 300c Gray
- One month post procedure he reports 0/10 pain

Patient 2

- A 52-year-old male with PTSD and IV drug use and prior right ankle fracture after an MVA in the 1990s and left knee pain after a fall in 2023 c/b septic arthritis persistent pain presented to clinic.
- MRI revealed an osteochondral lesion of lateral femoral condyle, joint effusion and patellofemoral compartment OA
- He was recommended to try LDRT
- Currently he is halfway through his treatment cycle and endorses 80% improvement in pain and is going to start PT soon

Conclusion

- LDRT is an emerging treatment option for chronic pain in the US
- There are current ongoing studies to help clarify the optimal dosage of radiation[2,3]
- These cases serves as a data point supporting LDRT for chronic traumatic and non operable knee pain

References

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