

as Table 5 suggests, neither of these sources was of great epidemiologic value, and both suffered from a common fault. Although the quantity of radium injected was usually recorded, evidence suggests that some individuals may have received further, unrecorded radium treatments. Thus, in these cases the recorded treatments must be taken as lower limits of the actual radium injection levels.

Three significant differences distinguish the patients at the two institutions in Table 5. First, the Elgin patients were, on the average, at least ten years younger than the clinic patients. Second, the Elgin patients received,

TABLE 5 Comparison of Patients Treated at Two Midwestern Institutions

Point of Comparison	Elgin	Clinic
Dates of treatment	1931-1933	1922-1928
Number of radium-treated patients	41	116
Males:females	17:24	74:42
Age at treatment, years ( $\pm$ s.d.)	33.5 $\pm$ 14.0	46.6 $\pm$ 15.0
Age range, years	16-72	15-81
Number of patients with known ages	41	114
Average radium dose, $\mu$ Ci ( $\pm$ s.d.)	189.3 $\pm$ 99.9	43.0 $\pm$ 31.6
Dose range, $\mu$ Ci	70-450	10-210+
Number of patients with known doses	30	108
Average survival after radium, years ( $\pm$ s.d.)	30.6 $\pm$ 14.3	15.6 $\pm$ 16.3
Survival range, years	4-52.6	0.02-57.8
Number of patients still living (1990)	1	0
Number of deaths verified by death certificate	28	69
Number of patients with measured body burdens	31	9
Number measured while alive	30	4
Number measured after exhumation	1	5
Number of radium-induced malignancies		
Bone sarcomas	3	0
Head carcinomas	5	0