Cost in perspective: direct assessment of American market acceptability of Co-60 in gynecologic high-dose-rate brachytherapy and contrast with experience abroad.

Mailhot Vega RB Jr, Barbee D, Talcott W, Duckworth T, Shah BA, Ishaq OF, Small C, Yeung AR, Perez CA, Schiff PB, Ginsburg O, Small W, Abdel-Wahab M, Bardales GS, Harkenrider M.

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Abstract

PURPOSE: While Ir-192 remains the mainstay isotope for gynecologic high-dose-rate (HDR) brachytherapy in the U.S., Co-60 is used abroad. Co-60 has a longer half-life than Ir-192, which may lead to long-term cost savings; however, its higher energy requires greater shielding. This study analyzes Co-60 acceptability based on a one-time expense of additional shielding and reports the financial experience of Co-60 in Peru's National Cancer Institute, which uses both isotopes. MATERIAL AND METHODS: A nationwide survey was undertaken assessing physician knowledge of Co-60 and willingness-to-pay (WTP) for additional shielding, assuming a source more cost-effective than Ir-192 was available. With 440 respondents, 280 clinicians were decision-makers and provided WTPs, with results previously reported. After completing a shielding report, we estimated costs for shielding expansion, noting acceptability to decision makers' WTP. Using activity-based costing, we note the Peruvian fiscal experience. RESULTS: Shielding estimates ranged from $173,000 to $418,000. The percentage of respondents accepting high-density modular or lead shielding (for union and non-union settings) were 17.5%, 11.4%, 3.9%, and 3.2%, respectively. Shielding acceptance was associated with greater number of radiation oncologists in a respondent's department but not time in practice or the American Brachytherapy Society membership. Peru's experience noted cost savings with Co-60 of $52,400 annually. CONCLUSIONS: By comparing the cost of additional shielding for a sample institution's HDR suite with radiation oncologists' WTP, this multi-institutional collaboration noted < 20% of clinicians would accept additional shielding. Despite low acceptability in the US, Co-60 demonstrates cost-favorability in Peru and may similarly in other locations.

Radiodermitis tardía: Entidad infrecuente a tener en cuenta.

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Abstracto

La radiodermitis es un efecto secundario en la piel que surge como consecuencia de la exposición a la radiación durante el tratamiento del cáncer y afecta a más de la mitad de los pacientes expuestos a la radioterapia. La radiodermitis puede ser clasificada en aguda o tardía según el tiempo transcurrido desde el fin de la radioterapia y la presentación de los síntomas. La radiodermitis tardía se presenta varios meses o hasta años después de haber finalizado el tratamiento, lo cual podría deberse a que la piel presenta un efecto de “recuerdo”. Se presenta el caso de una paciente tratada con radioterapia concurrente con quimioterapia por un cáncer de amígdala localmente avanzado, la cual presentó un cuadro de radiodermitis tardía 17 meses después de terminado el tratamiento con radioterapia. Su diagnóstico oportuno permitió que ella siguiera un tratamiento adecuado con corticoides tópicos y antiinflamatorios sistémicos, mostrando una buena respuesta al tratamiento.

Intraoperative radiotherapy for glioblastoma: an international pooled analysis.

Sarria GR, Sperk E, Han X, Sarria GJ, Wenz F, Brehmer S, Fu B, Min S, Zhang H, Qin S, Qiu X, Hänggi D, Abo-Madyan Y, Martinez D, Cabrera C, Giordano FA.

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Abstract

PURPOSE: To report the results of the first international pooled analysis of patients with glioblastoma treated with intraoperative radiotherapy (IORT) in addition to standard of care therapy. METHODS: Data from 51 patients treated at five centers in Germany, China and Peru were analyzed. All patients underwent tumor resection followed by a single application of IORT (10-40Gy, prescribed to the applicator surface) with low-energy X-rays. Thereafter, standard adjuvant radiochemotherapy and maintenance chemotherapy were applied. Factors of interest were overall survival (OS), progression-free survival (PFS), local PFS (L-PFS; defined as appearance of new lesions ≤1 cm to the cavity border) and distant PFS (D-PFS; lesions >1 cm). The same endpoints were estimated at 1-, 2- and 3-years using the Kaplan-Meier method. Additionally, rates and severity (as per Common Terminology Criteria for Adverse Events Version 5.0) of radionecrosis (RN) were analyzed. RESULTS: The median age was 55 years (range: 16-75) and the median Karnofsky Performance Status was 80 (20-100). At a median follow-up of 18.0 months (2-42.4), the median OS, PFS, L-PFS and D-PFS were 18.0 months (95% CI: 14.7-21.3), 11.4 months (95%CI: 7.58-15.22), 16 months (95%CI: 10.21-21.8) and 30.0 months (95%CI: 18.59 - 41.41), respectively. The estimated 1-, 2- and 3-year OS, PFS, L-PFS and D-PFS were 79.5%, 38.7% and 25.6%; 46.2%, 29.4%, and 5.9%; 60.9, 37.9%, and 12.6%; and 76.7%, 65.0%, and 39.0% respectively. First progression occurred locally in only 35.3% of cases. Grade 1 RN was detected in 7.8% and grade 3 in 17.6% of the patients. No grade 4 toxicity was reported and no treatment-related deaths occurred. CONCLUSION: Compared to historical data, this pooled analysis suggests improved efficacy and safety of IORT with low-energy X-rays for newly diagnosed glioblastoma. Prospective data is warranted to confirm these findings.