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Reduced radiation dose for elective nodal irradiation in node-negative anal cancer: back to the roots?

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Abstract

BACKGROUND: Chemoradiation (CRT) is the standard of care in patients with node-positive (cN+) and node-negative (cN0) anal cancer. Depending on the tumor size (T-stage), total doses of 50-60 Gray (Gy) in daily fractions of 1.8-2.0 Gy are usually applied to the tumor site. Inguinal and iliac lymph nodes usually receive a dose of ≥ 45 Gy. Since 2010, our policy has been to apply a reduced total dose of 39.6 Gy to uninvolved nodal regions. This paper provides preliminary results of the efficacy and safety of this protocol.

PATIENTS AND METHODS: Overall, 30 patients with histologically confirmed and node-negative anal cancer were treated in our department from 2009-2014 with definitive CRT. Histology all cases showed squamous cell carcinoma. A total dose of 39.6 Gy [single dose (SD) 1.8 Gy] was delivered to the iliac/inguinal lymph nodes. The area of the primary tumor received 50-59.4 Gy, depending on the T-stage. In parallel with the irradiation, 5-fluorouracil (5-FU) at a dose of 1000 mg/m(2) was administered by continuous intravenous infusion over 24 h on days 1-4 and 29-32, and mitomycin C (MMC) at a dose of 10 mg/m(2) (maximum absolute dose 14 mg) was administered on days 1 and 29. The distribution of the tumor stages was as follows: T1, n = 8; T2, n = 17; T3 n = 3. Overall survival (OS), local control (LC) of the lymph nodes, colostomy-free survival (CFS), and acute and chronic toxicities were assessed.

RESULTS: The median follow-up was 27.3 months (range 2.7-57.4 months). Three patients (10.0 %) died, 2 of cardiopulmonary diseases and one of liver failure, yielding a 3-year OS of 90.0 %. Two patients (6.7 %) relapsed early and received salvage colostomies, yielding a 3-year CFS of 93.3 %. No lymph node relapses were observed, giving a lymph node LC of 100 %. According to the Common Terminology Criteria for Adverse Events Version 4.0 (CTCAE V. 4.0), there were no grade IV gastrointestinal or genitourinary acute toxicities. Seven patients showed acute grade III perineal skin toxicity. Acute grade III groin skin toxicity was not observed.

CONCLUSION: Reducing the total irradiation dose to uninvolved nodal regions to 39.6 Gy in chemoradiation protocols for anal carcinoma was safe and effective, and a prospective evaluation in future clinical trials is warranted.

KEYWORDS: Adverse effects; Chemoradiotherapy; Dose restriction; Elective lymph node irradiation; Survival

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