

Answer 1:

Bibliographic Information

Distribution of radioiodinated estramustine binding protein antibody in mice with DU-145 prostate cancer xenograft.

Stahlberg, Kaarlo; Kairemo, Kalevi; Karonen, Sirkka-Liisa; Taari, Kimmo; Rannikko, Sakari. Department of Urology, Helsinki University Central Hospital, Helsinki, Finland. *Anticancer Research* (2007), 27(4B), 2275-2278. Publisher: International Institute of Anticancer Research, CODEN: ANTRD4 ISSN: 0250-7005. Journal written in English. CAN 147:400587 AN 2007:994185 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

Estramustine phosphate (EMP) and estramustine binding protein antibody (EMBP-AB) accumulate in the mouse prostate. The distribution of radioiodinated EMBP-AB in tumor mice was investigated to assess its therapeutic potential against prostate cancer. Mice with DU-145 prostate cancer xenografts received 243 μ Ci of I-125-labeled EMBP-AB (RI-EMBP-AB). The concn. of activity in different organs was measured 4 h after the injection. The blood contained 0.45% of the injected dose per g, the prostate 2.4%, the testes 0.95% and the tumor 0.65%. Radioactivity in these organs decreased more rapidly than in other organs. The doses of radiation absorbed by the prostate and the tumor, assuming a 1 mCi injected dose, were 1.81 and 0.92 cGy, resp. Most other organs would receive relatively high doses of radioactivity, were I-125 to be used in therapeutic doses. Therefore, RI-EMBP-AB is not beneficial in radionuclide treatment as compared to possible EMP applications.

Answer 2:

Bibliographic Information

Evaluation of Combined ¹⁷⁷Lu-DOTA-8-AOC-BBN(7-14)NH₂ GRP Receptor-Targeted Radiotherapy and Chemotherapy in PC-3 Human Prostate Tumor Cell Xenografted SCID Mice.

Johnson, Christopher V.; Shelton, Tiffani; Smith, Charles J.; Ma, Lixin; Perry, Michael C.; Volkert, Wynn A.; Hoffman, Timothy J. Department of Veterinary Pathobiology, University of Missouri-Columbia, Columbia, MO, USA. *Cancer Biotherapy & Radiopharmaceuticals* (2006), 21(2), 155-166. Publisher: Mary Ann Liebert, Inc., CODEN: CBRAFJ ISSN: 1084-9785. Journal written in English. CAN 146:179504 AN 2006:462042 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

The focus of this study was to evaluate the therapeutic benefit of combined gastrin-releasing peptide (GRP) receptor-targeted radiotherapy (TRT) with chemotherapy, using the PC-3 xenograft severe combined immunodeficiency (SCID) mouse model. ¹⁷⁷Lu-DOTA-8-AOC-BBN(7-14)NH₂ is a radiotherapeutic peptide that specifically targets the gastrin-releasing peptide receptor overexpressed on primary and metastatic prostate cancer. The chemotherapeutic agents, docetaxel and estramustine, were administered as single agents or in combination with the receptor-targeted radiotherapeutic agent. Combination receptor TRT/chemotherapy studies were begun 21 days postxenografting and were conducted as multiple-dose trials. The GRP receptor TRT agent was administered every 14 days, and single and combination chemotherapy dose regimens were given weekly. Tumor size, body wt., and body condition score were evaluated twice-weekly and a hematol. profile once-weekly. Therapy study tumor vols. were evaluated by way of a repeated measures anal. of variance (ANOVA). Tumor vol. measurements at 12 days postdose administration demonstrated a statistically significant (two-tailed P-value <0.05) tumor growth suppression in all exptl. groups receiving GRP receptor-targeted radiotherapy, when compared to the control group. The two combined GRP receptor TRT/chemotherapy treatment groups demonstrated the greatest tumor growth suppression of all treatment groups. In comparing the two combined GRP receptor TRT/chemotherapy groups to the GRP receptor TRT alone group, a statistically significant difference was demonstrated for the combined groups by day 30, postdose administration. These data demonstrate that GRP receptor-targeted radiation therapy, using ¹⁷⁷Lu-DOTA-8-AOC-BBN(7-14)NH₂, used either alone or in combination with conventional chemotherapy, can suppress the growth of androgen-independent prostate cancer (AIPC).

Answer 3:

Bibliographic Information

Radiation sensitizing effect of estramustine is not dependent on apoptosis. Stahlberg, Kaarlo; Kairemo, Kalevi; Erkkila, Krista; Pentikainen, Virve; Sorvari, Pekka; Taari, Kimmo; Dunkel, Leo; Rannikko, Sakari. Departments of Urology, Oncology, Helsinki University Central Hospital, Helsinki, Finland. *Anticancer Research* (2005), 25(4), 2873-2878. Publisher: International Institute of Anticancer Research, CODEN: ANTRD4 ISSN: 0250-7005. Journal written in English. CAN 143:262608 AN 2005:921838 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

Background: Estramustine is an anti-mitotic cytostatic drug that also enhances the effect of radiotherapy. The mechanism of radiosensitization is not thoroughly known. Since both radiotherapy and estramustine induce apoptosis in prostate cancer cells, we conducted an expt. to show whether radiosensitization is mediated by apoptosis. Materials and Methods: DU-145 human prostate cancer cells were xenografted to nude mice and treated with estramustine for 2 wk and external radiation for 3 to 6 days (18 to 36 Gy). Tumor regression was measured mech. and the rate of apoptosis defined by the amt. of low mol. wt. DNA fragmentation. Follow-up time was 1 to 18 days. Results: The tumor size regressed in the group of mice receiving both radiotherapy and estramustine. Four weeks after the treatment, apoptosis was accentuated in the tumors treated with estramustine or radiation but not with their combination. Conclusion: Estramustine potentiates radiotherapy, but not by enhancing radiation-induced apoptosis.

Answer 4:

Bibliographic Information

Expression of Ki-67--a proliferation-associated antigen--in prostatic cancer. Nilsson S; Nordgren H; Eklov S; Logdahl M Department of Oncology, Akademiska Hospital, Uppsala University, Sweden *Acta oncologica* (Stockholm, Sweden) (1991), 30(2), 177-9. Journal code: 8709065. ISSN:0284-186X. Journal; Article; (JOURNAL ARTICLE); (RESEARCH SUPPORT, NON-U.S. GOV'T) written in English. PubMed ID 2029402 AN 91229872 MEDLINE (Copyright (C) 2008 U.S. National Library of Medicine on SciFinder (R))

Abstract

The expression of the proliferation-associated antigen Ki-67 was studied in human prostatic cancer. The antigen was analyzed with an immuno-histochemical technique in TUR specimens. A correlation was seen between Ki-67 positivity and differentiation grade. All TUR specimens (15/15) with poorly differentiated carcinomas expressed the antigen. Moderately differentiated carcinomas constituted an intermediate group and slightly less than half of the cancers (12/27) were positive for the antigen. Only one of the highly differentiated carcinomas (1/12) expressed the antigen. All TUR specimens from patients with benign prostatic hyperplasia (8/8) were negative. The effect on Ki-67 positivity was also investigated in a human prostatic cancer heterotransplanted to nude mice and subjected to ionizing irradiation with or without concomitant estramustine treatment. The antigen expression was compared with that seen in tumour tissues from untreated mice and from mice treated with estramustine alone. A pronounced effect was seen in the combination treatment group with an approximately 50% reduction of the Ki-67 positive cells. The results are discussed in relation to prognosis and follow-up after radiation therapy and the possible use of estramustine in combination with radiation therapy.