



1: Pharmacol Biochem Behav 1984;21 Suppl 1:17-23

Pharmacological and toxicological investigations of cesium.

Pinsky C, Bose R.

Cesium, a mineral resource abundantly present in Manitoba with important existing and potential industrial applications was investigated to study its effects on biological systems. Several rodent models of pharmacological activities were utilized. The profile that emerged indicated that cesium is only moderately toxic and exerts salubrious effects which could be gainfully investigated for application in the treatment of certain psychological disorders and some tumors. Its conjunction with existing pharmacological agents for these two types of disorders could yield a pharmacologically active yet less toxic therapeutic combination.

PMID: 6543004 [PubMed - indexed for MEDLINE]

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=6543004&dopt=abstract

1: Pharmacol Biochem Behav 1984;21 Suppl 1:7-10

Nutrients and cancer: an introduction to cesium therapy.

Sartori HE.

A brief overview on the relevance in dietary factors in both development and prevention of cancer is presented. The pharmacologic properties of various food ingredients are discussed. Establishing of a special diet for the cancer patient is suggested. In addition, avoidance of certain foods is recommended to counteract mucus production of cancer cells. Evaluation of the nutrient content of certain diets in regions with low incidence of cancer has advanced the use of certain alkali metals, i.e., rubidium and cesium, as chemotherapeutic agents. The rationale for this approach termed the "high pH" therapy resides in changing the acidic pH range of the cancer cell by cesium towards weak alkalinity in which the survival of the cancer cell is endangered, and the formation of acidic and toxic materials, normally formed in cancer cells, is neutralized and eliminated.

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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=6522434&dopt=abstract

1: Pharmacol Biochem Behav 1984;21 Suppl 1:27-30

Biochemical aspects of cesium administration in tumor-bearing mice.

Messiha FS.

The effect of pretreatment with CsCl on mice bearing sarcoma I implants was studied as a function of duration of treatment period, life span and tissue Cs⁺ and K⁺ levels. Treatment with CsCl for 14 consecutive days prior to sarcoma implantation resulted in initial reduction of the tumor-mediated mortality compared to controls and to a one week pretreatment period with identical doses of CsCl. A large accumulation of endogenous K⁺ was noted in tumor mass



compared to nonmalignant tissue of the same animals or to tumor-free controls receiving identical Cs-treatment. The entry of exogenously administered Cs⁺ into malignant tissue was less than that accumulating in respective controls. The accumulation of Cs⁺ in tumor mass was dose-dependent. The ratio of K⁺:C⁺ was greater in tumor tissue than in nonmalignant tissue. The results suggest that a critical balance between these alkali metals may be required for adequate Cs effect against the tumor studied.

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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=6522430&dopt=abstract

1: Pharmacol Biochem Behav 1984;21 Suppl 1:25-6

The response of colon carcinoma in mice to cesium, zinc and vitamin A.

Tufte MJ, Tufte FW, Brewer AK.

Predetermined amounts of cesium chloride or carbonate, zinc gluconate and vitamin A were used together to alter growth of colon carcinoma (C38) implants in BDF1 mice. Data show that the use of these compounds in a treatment protocol is responsible for repression of tumor growth.

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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=6522429&dopt=abstract

1: Pharmacol Biochem Behav 1984;21 Suppl 1:11-3

Cesium therapy in cancer patients.

Sartori HE.

The effect of cesium therapy on various cancers is reported. A total of 50 patients were treated over a 3 year period with CsCl. The majority of the patients have been unresponsive to previous maximal modalities of cancer treatment and were considered terminal cases. The Cs-treatment consisted of CsCl in addition to some vitamins, minerals, chelating agents and salts of selenium, potassium and magnesium. In addition, a special diet was also instituted. There was an impressive 50% recovery of various cancers, i.e., cancer of unknown primary, breast, colon, prostate, pancreas, lung, liver, lymphoma, ewing sarcoma of the pelvis and adeno-cancer of the gallbladder, by the Cs-therapy employed. There was a 26% and 24% death within the initial 2 weeks and 12 months of treatment, respectively. A consistent finding in these patients was the disappearance of pain within the initial 3 days of Cs-treatment. The small number of autopsies made showed the absence of cancer cells in most cases and the clinical impression indicates a remarkably successful outcome of treatment.

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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=6522427&dopt=abstract



1: Pharmacol Biochem Behav 1984;21 Suppl 1:1-5

The high pH therapy for cancer tests on mice and humans.

Brewer AK.

Mass spectrographic and isotope studies have shown that potassium, rubidium, and especially cesium are most efficiently taken up by cancer cells. This uptake was enhanced by Vitamins A and C as well as salts of zinc and selenium. The quantity of cesium taken up was sufficient to raise the cell to the 8 pH range. Where cell mitosis ceases and the life of the cell is short. Tests on mice fed cesium and rubidium showed marked shrinkage in the tumor masses within 2 weeks. In addition, the mice showed none of the side effects of cancer. Tests have been carried out on over 30 humans. In each case the tumor masses disappeared. Also all pains and effects associated with cancer disappeared within 12 to 36 hr; the more chemotherapy and morphine the patient had taken, the longer the withdrawal period. Studies of the food intake in areas where the incidences of cancer are very low showed that it met the requirements for the high pH therapy.

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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=6522424&dopt=abstract

1: Cytobios 1979;24(94):99-101

The effects of rubidium on mammary tumour growth in C57 blk/6J mice.

Brewer AK, Clarke BJ, Greenberg M, Rothkopf N.

A high pH therapy for cancer arrived at theoretically was tested in mice by feeding them rubidium carbonate. Tumours were transplanted in the abdomen of mice and allowed to grow for 8 days. The mice were then divided into two groups. The control group was continued on conventional mouse chow. The test group, in addition to the mouse chow, was force-fed 1.11 mg of rubidium carbonate dissolved in distilled water. At the end of 13 more days the tumours in the controls had grown to a large size so all the mice were sacrificed. The tumours were then removed and weighed. The tumours in the test animals weighed essentially one eleventh of those in the controls. In addition the test animals were showing no adverse effects from the cancers. The probability that this marked difference in tumour size could have come about by chance is exceedingly small.

PMID: 43800 [PubMed - indexed for MEDLINE]

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=43800&dopt=abstract



1: J Surg Oncol 1981;18(4):423-9

Effect of alkali metal salts on Sarcoma I in A/J mice.

El-Domeiri AA, Messiha FS, Hsia WC.

The chloride salts of lithium (Li⁺) and cesium (Cs⁺) were evaluated for their ability to influence the growth of Sarcoma I implants in A/J mice. The administration of daily doses of either 1 or 3 mEq/kg CsCl to these mice reduced the incidence and size of tumor implants. This effect was not apparent in animals receiving a smaller dose (0.5 mEq/kg) of the same drug. At the time of sacrifice the serum level of Cs⁺ in this latter group was approximately half that recorded in animals receiving the higher doses of CsCl. No effect on tumor incidence or rate of growth was observed in animals receiving different doses of LiCl. Because of the similarities that existed between cesium and potassium, it was postulated that the effect of cesium was due to alterations in the intracellular composition of the tumor cells. Also, the possible role of cytotoxic agents in potentiating the inhibitory effect of cesium on tumors was discussed.

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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=retrieve&db=pubmed&list_uids=6275211&dopt=abstract
