

SCIENCE NEWS

BRNS SYMPOSIUM "MODIFIERS OF RADIOSENSITIVITY IN RADIOTHERAPY" CANCER INSTITUTE, ADYAR, MADRAS, INDIA, DECEMBER 14, 1982.

The Department of Atomic Energy, Government of India through the Board of Research in Nuclear Sciences organized a symposium on "Modifiers of Radiosensitivity in Radiotherapy" at the Cancer Institute, Adyar, Madras, on December 14, 1982. About eighty scientists from different parts of the country and the staff of Cancer Institute attended the Symposium. Dr. Ross and Dr. Day from U.K. also participated in the deliberations. Dr. S. Krishnamurthi highlighted the contributions of the Cancer Institutes, Madras in the field of radiosensitisation using synkavit, metronidazole and hyperthermia. Since his results on oral cancers with hypoxic cell sensitizers proved disappointing, he preferred a multidrug combination therapy with radiations. He maintained that the morbidity noticed in metronidazole treated patients did not encourage him to further continue his trials. Dr. B. B. Singh, in his lecture, detailed the radiobiological principles underlying each class of radiosensitizer. He described the role of cellular membrane in radiation lethality of cells and showed that several membrane specific drugs like anaesthetics and tranquilisers caused radiosensitisation of hypoxic bacterial cells and solid animal tumours. Among these, encouraging results were obtained with phenothiazine derivatives such as 'largactil' phenergan, valleragan and stemetil. Dr. D. R. Singh presented information on inhibition of DNA repair by misonidazole in Yoshida ascites tumour cells in irradiated animals as well as in cells irradiated *in vitro*. Dr. V. K. Gupta reviewed published information on clinical trials with metronidazole along with his phase I studies on base tongue carcinomas. Dr. R. L. Bhalevat reported better local control in advanced cases of carcinoma of cervix in patients given intravenous metronidazole. He observed 73.5% cases with no evidence of disease out of a total 19 cases. Dr. M. Sharma described his results on 25 cases of carcinoma of head

and neck given radiation treatment in combination with mitomycin-C. Modification of fractionation schedule to suit the convenience of patients coming from long distances was advocated by Dr S. Hukku and by Dr K. A. Chaubal. The factors which ought to be looked into were radiosensitizers, radioprotectors, fractionation, hyperthermia and high LET radiation. The radioprotection of human patients against side effects of radiotherapy like nausea, was demonstrated by Dr. S. Kumar using MPG (2-mercapto propionylglycine).

Dr B. S. Rao reviewed the biological basis of hyperthermic response of normal and malignant tissues and emphasised the potential of this modality in cancer treatment. Dr. U. Madhavanath in his lecture opined that high LET radiations may not be the choice of future for cancer treatment in India. He advocated in introduction of newer radiobiological concepts in the present day radiotherapy.

A panel of "Future of Radiomodifying Agents" was also organised following the formal paper presentations. During the discussion, opinion on the results with nitrocompounds particularly metronidazole, remained divided, but the need for searching new types of radiosensitizers was stressed. From this point of view, membrane specific drugs offered an alternative way but their use in clinical practice should get established. Hyperthermia looks attractive, but technological difficulties have yet to be satisfactorily overcome.

It was recommended that a National Study Group on "Radiomodifiers for Radiotherapy of Cancer" be formed to formulate the future strategies for research in this field at this stage of scientific activity in India. This group might be sponsored by the Department of Atomic Energy, which organised the Symposium.

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CORRIGENDUM

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