reactions. This is further supported by comparable studies in athymic ("nude") mice, where admixture with BCG prevented subcutaneous development of rat tumour cell inocula.

The implication from these findings is that localized BCG treatment may still be applicable clinically, even when immunosuppression has resulted from chemotherapy or radiotherapy.

TUMOUR ANTIGEN IN HUMAN CANCER PATIENTS' SERA. J. G. BOWEN, Cancer Research Campaign Laboratories, University of Nottingham.

Previous studies (Baldwin, Bowen and Price, *Br. J. Cancer*, 1973, **28**, 16) have shown that tumour specific antigen can be isolated from the serum of rats bearing a transplanted aminoazo dye-induced hepatoma. The present study was undertaken to determine if the sera of human bladder cancer patients contained a tumour specific antigen. Sera were fractionated by Sephadex G-150 gel chromatography and material with a molecular weight less than 150,000 Daltons examined for the presence of tumour specific antigen by the leucocyte migration inhibition test using leucocytes from bladder cancer patients, other cancer patients and non-cancer hospital patients. Antigen could be detected in the sera of patients bearing tumour *in situ* and those within one month of tumour elimination. Patients tumour free for longer than 3–4 years lacked reactivity against the tumour bearer serum fraction.

CELL MEDIATED CYTOTOXICITY (CMC) IN PATIENTS WITH ACUTE MYELOBLASTIC LEUKAEMIA RECEIVING IMMUNOTHERAPY. G. M. TAYLOR, R. HARRIS and C. B. FREEMAN, Department of Medical Genetics, St Mary's Hospital, Manchester.

The effect of immunotherapy with allogeneic leukaemic blasts in patients with acute myeloid leukaemia (AML) was assessed by stimulating lymphocytes from these patients when in remission and also lymphocytes from normal donors with immunotherapy blasts (I blasts), Burkitt's lymphoma (RAJI) cells and normal lymphoblastoid cells (LCL). After 6 days in culture, stimulated lymphocytes were cross-tested for cell mediated cytoxicity (CMC) against ^{51}Cr-labelled target cells of the same origin as those used to stimulate the lymphocytes. Patients on immunotherapy, and stimulated *in vitro* with I blasts invariably showed a higher level of line directed CMC compared with normals whereas cross tests of the same lymphocytes against RAJI and LCL cells revealed lower, though reproducible, cytotoxicity. RAJI generally failed to produce cytotoxicity either in patients or normals, whilst LCL induced cytotoxicity in both sources of lymphocytes, with some evidence of cross-reactivity. Immunotherapy patients seem to possess a pool of lymphocytes capable of restimulation *in vitro* to give high levels of CMC, a property which could be useful for evaluating the response to immunotherapy of AML patients and which could aid the search for tumour associated antigens on autochthonous blasts. Moreover, CMC response is direct evidence that the measures being used at present to induce cell mediated immunity in these patients do in fact work and may be of value in selecting cells for use in immunotherapy.

ACTIVE IMMUNOTHERAPY IN ACUTE MYELOID LEUKAEMIA. C. B FREEMAN, G. M. TAYLOR and R. HARRIS, St Mary's Hospital, Manchester, and C. G. GEARY, J. E. MACIVER and I. W. DELAMORE, Manchester Royal Infirmary.

The duration of first remission in a small group (7) of acute myeloid leukaemia (AML) patients maintained with irradiated allogeneic leukaemia cells and BCG, after initial consolidation chemotherapy, was similar to that achieved in comparable trials using conventional chemotherapy (Freeman *et al.*, *Br. med. J.*, 1973, iv, 571). In a second series of 20 patients in the MRC 6th AML Trial, to whom the same immunotherapy was given but without prior consolidation chemotherapy, the median duration of first remission was considerably shorter.

Compared with patients receiving other therapeutic protocols, there was a remarkably high reinduction rate following relapse in both series of patients maintained with immunotherapy alone (second remissions in group 1: 5/6, group 2: 12/18 with four third remissions) and the overall survival figures are very encouraging (group 1: 4/7 alive, current mean survival 115 weeks, group 2: 13/20, current mean survival 50 weeks).