J Cancer Sci Ther 2018, Volume 10
DOI: 10.4172/1948-5956-C11-154

Management of advanced colon cancer utilizing vaccines derived from immunogenic oncofetal proteins

Arlen Myron[1], **Arlen P**[2], **Tsang K**[2], **Coppa G**[1] and **Conte C**[1]
[1]North Shore Surgical Oncology, USA
[2]The Hofstra College of Medicine and Precision Biologics, USA

The appearance of a malignant lesion usually results from genetic transformation within cells that arise in a mutated tissue field resulting from transfection by an oncogenic virus or carcinogen. The fully malignant state, i.e. Colon Cancer develops at one site in the field while the other sites are kept dormant due to inhibitory molecules shed from the primary developing lesion. The host immune system ignores the existing oncogenic transformation resulting in a Cancerous lesion, whereas an Infectious process is immediately brought under control. Removing an infectious process occurs through recognition of a threshold level of immunogenic protein that characterizes the infectious organism. A malignant growth also contains immunogenic proteins but expresses them at levels below recognition by the host's immunocytes allowing the lesion to continue growing. To identify colon tumor immunogen an antigenic preparation was developed to define levels essential for host recognition. Pooled allogeneic tumor protein suspensions were prepared from multiple operative specimens. These suspensions were employed using Sephadex G-200 followed by Isoelectric Focusing. The resulting protein samples were then tested by DHR (Delayed Cutaneous Hypersensitivity). Monoclonal antibodies were then produced for antigen purification and sequencing. Antigens expressed by the colon lesion were found at sub-threshold levels of 10-20 ugms. whereas 500 ugms were needed to elicit a positive clinical response. In the colon lesion, the immunogens proved to be post-translational modifications of the oncofetal proteins A33, MUC5ac and CEAcam 5,6. Antitumor activity was found to occur via a humoral IgG1 response and not CD8cell mediated as anticipated. ADCC (antibody dependent cell cytotoxicity) represented the major mechanism for tumor destruction. When mAbs such as Neo-102 were given to patients with end-stage colon cancer having failed all known therapeutic approaches, the IV delivery resulted in significant enhancement in survival. We were able to demonstrate that in 48 patients, a survival rate approximating 30 months were noted with historic controls less than 5 months. A Phase III study is being planned with the addition of low dose chemotherapy added to minimize the tumor elaborating inhibitory molecules that reduce the immunogenicity of the IV mAb being delivered for therapy.

marlenmd@msn.com

Notes: