Myron Arlen, J Cancer Sci Ther 2015, 7:8
http://dx.doi.org/10.4172/1948-5956.C1.057

OMICS International
conferenceseries.com

5th World Congress on
Cancer Therapy
September 28-30, 2015 Atlanta, USA

Monoclonal antibodies that target pancreatic and colorectal cancer for both diagnosis and therapy

Myron Arlen
North Shore University Hospital, USA

The use of monoclonal antibodies has become an important aspect in planning for the treatment of the cancer patient and in particular those with metastatic pancreatic and colorectal cancer. It does require that the antibody be specific for an immunogenic target in the tumor cell. In the overall scheme, such an antibody should fit into Lee Hartwells (Fred Hutchinson Cancer Center) description of a product (mAb) that can both detect specific tumor proteins with a high degree of accuracy for diagnosis and when confirmed, be used as a therapeutic agent to target and destroy the malignancy.

Antibodies for a large array of neoplasms are now in development at Precision Biologics. All are based on having been able to define the immunogenic protein expressed by the tumor. Such proteins have been now been characterized for Pancreatic and Colon Cancer. They have been shown in most instances to be oncofetal in origin. The primary immunogen, seen for the most part in both tumors, appears to be a post translational modification of MUC5ac. The gene is turned on in thr fetus to produce needed intestinal mucin, and later prior to full fetal matur\ation, the gene is remethylated. Failure to shut down this process induces the appearance of cytic fibrosis. In the adult, an oncogenic transformation modifies the MUC5ac gene and the protein that is expressed, induces malignant transformation. The protein that is expressed as TAA, appears in the earliest phases of transformation to malignancy acting as a target for immunogenic diagnosis and therapeutic targeting. Throughout progression of the lesion to the metastatic state, this TAA is not modified and as such, that antibody targeting the primary tumor remains effective in addressing the metastatic lesion.

In treating pancreatic and colorectal Ca we have shown that when the specific TAA is employed, enhancement in immune reactivity is essentially mediated via the humoral immune system. Cell mediated immunity takes a minor position. The antibody that we have employed for identifying the tumor target, that is Neo 102, has been shown to not only have a high rate of ADCC but induces apoptosis secondary to favtors defined by Annexin V binding. In our treatment of metastatic pancreatic cancer patients having failed Gemcitabine therapy, the addition of Abraxane has been shown to increase survival by approximately 8 wks. When monoclonal Neo 102 is delivered IV following Gemcitabine failure the average improvement in survival is approximately 26-30 wks. Realizing that many immunotherapeutic agents require removal or diminution of inhibitory serum factors that can be effected by chemotherapy, . new studies are being initiated. These have been designed to compare Gemzar Abraxane vs. Gemzar Abraxane plus monolonal antibody (Neo 102).

Later we will be initiating studies where patients have undergone surgery for pancreatic Ca. Following the effective removal of a primary pancreatic Ca by the Whipple procedure, the recurrence rate by 2 years post surgery can reach more than 90%. We have designed a peptide vaccine using the eiptope binding site defined by Phage Display which targets the mutated MUC5ac protein. The study is designed to provide vaccine one month post surgery and it is hoped to illustrate that the vaccine which produces the needed level of antibody by 4-6 months can prevent the high rate of recurrence that has been noted.

Biography

Arlen serves as the Director of Scientific Affairs for Precision Biologics. He is involved in a consulting capacity, providing his renowned expertise as both senior scientific and clinical advisor for product development. He was trained as a cancer surgeon at Memorial Sloan-Kettering where he remained on staff for 20 years involved in the surgery of advanced cancer problems and the immunotherapeutic approaches to managing the patients. Dr. Arlen established the Surgical Oncology Division at North Shore University Hospital, and formed a practice group (North Shore Surgical Oncology Associates). He has written two major textbooks and published over 80 journal articles related to cancer treatment

myronarlen@yahoo.com