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The impact of genomic sequencing data in cancer immunotherapy

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Abstract

At the cellular level it is clear that cancer is a genetic disease arising as a clone that expands and grows in an unregulated manner. While it has always been presumed that neoplasia is a consequence of somatic cell mutations, only in the last few years has the magnitude and diversity of these mutations been elucidated by modern DNA sequencing technology. Immunotherapy is the premier biological approach to targeted therapy. Target therapies require targets. In this case the targets are tumor specific or associated antigens, the proteins expressed from these somatic cell mutations. While the immunotherapeutic approach to eliminating cancer was launched with the assumption that cancer cells were homogeneous, the recent genomic understanding of tumor cells indicates that there is both inter- and intra-tumoral heterogeneity. This presentation will discuss the consequences of this new knowledge of tumor cell biology to the immunotherapeutic approach to treating cancer.

Biography

He is the founder of Vaccinogen and the discoverer and developer of OncoVAX® an autologous vaccine designed to provoke a specific immune response against colon cancer cells. His previous accomplishments include Chairman (Emeritus) and Chief Scientific Officer of Intracel Resources, Chief Operating Officer of Organon Teknika/Biotechnology Research Institute and Sr. Vice President of Organon Teknika Corporation. Prior to that (1975-1982) Dr. Hanna was Director of the National Cancer Institute, Frederick Cancer Research Center.

OncoVAX® is an autologous vaccine designed to provoke a specific immune response against colon cancer cells. The product is comprised of irradiated tumor cells obtained from the patient after surgery and it is administered along with the BCG vaccine. Vaccinogen believes OncoVAX® is the first product to show a significant reduction in recurrence of disease in Stage II colon cancer patients in a major, long-term clinical trial. Except for surgery, there is no medically accepted treatment for Stage II colon cancer. Trials using adjuvant chemotherapy have not demonstrated any patient benefit to date.

He led the team that achieved FDA regulatory approval of TICE BCG for treatment of carcinoma in situ (CIS) bladder cancer. Worldwide registration was achieved in 1991 and it is standard of care for prophylaxis of recurrence of superficial bladder cancer and therapy of CIS.

He received a doctoral degree in experimental pathology and immunology from the University of Tennessee. He has over 225 publications to his credit, has 11 patents in immunotherapy and has been the recipient of numerous honors, and served on many editorial boards