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The Old and the New In Medical Cancer Therapy

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Abstract

Medical cancer treatment has evolved in a geometric manner since Gilman´s Mechlorethamine introduction into the bedside. Chemotherapy was born and rapidly proved its worth in different tumors and different clinical settings. Initially the bright results were seen in hematologic malignancies, namely complete remissions in some types of leukemias and lymphomas and posteriorly in solid tumors it changed the natural disease history in osteosarcoma, becoming adjuvant methotrexate the new overall survival drug in this malignancy. Many pediatric and young adults' tumors comported complete remissions with chemotherapy, rendering them as curable diseases. As this, testicular cancer became the first example of a curable cancer model within advanced solid tumors (Cisplatin was the gladiator here). Even when the first clinical trial became from the sixties, during the seventies Oncologists became interested in the after surgery chemo in breast cancer. Two pivotal trials (US and Europe), continue showing that even nearly 40 years after, the overall survival benefit of adjuvant chemo in this disease is impressive. As many as with chemo, hormonotherapy proved and continue to prove its worth in postmenopausal breast cancer women. Adding to the before, two milestones in chemo history are the role of chemo in larynx organ preservation and its positive role in the colorectal cancer adjuvant setting. Taking as a profit chemo radio sensitizer power, the role of concomitant chemotherapy and radiotherapy came up to age: Head neck, rectal cancer, anal cancer only to mention some tumor topographies amenable to this combined approach with organ preservation objectives. As time passed, new techniques in molecular imaging created new magic little bullets named them small molecules and leading this to the creation of the target or directed cancer therapy. The druggable targets here are inner cellular membrane and cytosolic proteins, mainly tyrosine kinases and mutant DNA segments and/or mutant oncogenes. As some tumors to be treated with them, were historically chemo-insensible, the real benefit in renal cancer and melanoma became notorious. Tumor metastatic shrinkage became a reality in these before-mentioned malignancies. César Milstein Nature 1975 Letter (discovery of the Monoclonal Antibodies) was the road to the beautiful landscape that is Immune Oncology today. We treat patients with vaccine, leading this to impressive clinical results in melanoma, lung, kidney, lymphomas and so on. Cellular Immunology is weakened in cancer but there are some molecules that block T Lymphocytes surface, so they couldn't go to the tumor target to eat them. This novel type of treatment, de-block the lazy lymphocytes. In the road of Immunology there are other-related-immune-novel compounds in trials and also new vaccines. In the future and not so far, we will cure still difficult-to-treat types of advanced cancer. Currently we have some tumor tissue complaints such as tumor heterogeneity that leads to cellular and clinical tumor resistance. Genomics and Proteomics are helping us with this and are currently at the bedside. In the meantime, at the bench side is Gene therapy. Cancer is mainly a DNA-disease and targeting what is correct can show us the long and winding road to a definite cure of this still deadly disease..

Biography:

Daniel Gandia is a currently working as a Clinical Oncologist who has been involved in Cancer Medicine for many years and also in the guidance of clinical oncology trials in an important worldwide American CRO. He has published several papers in important journals and he also teaches Cellular and Molecular Biology at the School of Medicine in Buenos Aires.