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Innovations in advanced cancer therapy: Therapeutic vaccines for chronic treatments

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The impact of biotechnology in cancer therapy has been given by its possibilities for generation of novel biological products, characterized by:

- high specificity
- low toxicity (compatible with good quality of life)
- possibility of being used chronically
- possibility of being used in combinations

The clinical course of a neoplastic disease goes through different clinical stages. If the disease is diagnosed in an early stage, the patient receives attack treatment consisting in surgery, chemotherapy and / or radiotherapy. Some patients may have a complete or partial remission, but others may have an initial response followed by a disease relapse or simply progression after attack treatments. In this moment, patients receive first and/or second line treatments for advanced disease. Again, some responses can be expected, but relapse can occur and then patients are considered in ¨terminal disease¨ stage, with progressive disease after receiving all available onco-specific drugs. The term ¨terminal disease¨, doesn´t mean that the patient will die immediately, but that there are no other available therapies for treatment of the tumor, mainly because onco-specific drugs toxicity impairs patient conditions.

The issue is to keep this advanced cancer patient´s alive, with a good quality of life, by applying non toxic treatments that can be given chronically. This is a change in the paradigm of cancer therapy that could mean to convert advanced cancer in a chronic disease which cannot be cured, but controlled for long periods of time with good quality of life for the patients. Therapeutic vaccines are novel tools for treating advanced cancer chronically. They are non toxic and its expected clinical effect is to increase patient´s survival with a good quality of life. Several cancer vaccines are in clinical testing. Here we are going to refer to CIMAvaxEGF, an EGF based cancer vaccine, designed to provoke specific anti-EGF antibodies that ¨castrate¨ circulating EGF avoiding its further binding to the EGF receptor, and then, the unchain of proliferation mechanisms derived from this ligand/receptor binding. During its clinical development, has been demonstrated its efficacy in improving survival in advanced non-small cell lung cancer patients, as well as a high safety profile. The feasibility of giving long term treatments with CIMAvaxEGF has also been demonstrated, opening the possibility of treating advanced lung cancer as a chronic disease.

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