

## **WASTING IN CANCER: IMPLICATIONS IN AGEING SARCOPENIA**

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Cancer cachexia is a syndrome characterized by a marked weight loss, anorexia, asthenia and anemia. In fact, many patients who die with advanced cancer suffer from cancer cachexia. The degree of cachexia is inversely correlated with the survival time of the patient and it always implies a poor prognosis. Unfortunately, at the clinical level, cachexia is not treated until the patient suffers from a considerable weight loss and wasting. At this point, the cachectic syndrome is almost irreversible. The cachectic state is often associated with the presence and growth of the tumour and leads to a malnutrition status due to the induction of anorexia or decreased food intake. In addition, the competition for nutrients between the tumour and the host leads to an accelerated starvation state which promotes severe metabolic disturbances in the host, including hypermetabolism which leads to an increased energetic inefficiency. Although the search for the cachectic factor(s) started a long time ago, and although many scientific and economic efforts have been devoted to its discovery, we are still a long way from knowing the whole truth. A lot of progress has been made, however, and the suggested mediators (associated with both depletion of fat stores and muscular tissue) can be divided into two categories: of tumour origin (produced and released by the neoplasm) and humoral factors (mainly cytokines). In recent years, age-related diseases and disabilities have become of major health interest and importance. This holds particularly for muscle wasting, also known as sarcopenia, that decreases the quality of life of the geriatric population, increasing morbidity and decreasing life expectancy. The aim of the presentation is to summarize and evaluate the different mechanisms and catabolic mediators (both humoral and tumoural) involved in cancer cachexia and ageing sarcopenia since they may represent targets for future promising clinical investigations.