Disseminated tumor cells

Disseminated tumor cells are cancer cells that have left the primary tumor and survived in the circulation to land in a distant organ.

Disseminated tumor cells (DTCs) are known to enter a state of dormancy that is achieved via growth arrest of DTCs and/or a form of population equilibrium state, strongly influenced by the organ microenvironment.

It has been suggested that brain metastases (BM) growing from previously dormant disseminated tumor cells (DTCs) may exhibit a milderphenotype than BM-derived from continuously progressing metastatic cells; the prognosis of patients presenting with BM from dormant DTCs is unknown. A study retrospectively compared survival data, collected from a single neurosurgical center, between patients presenting with BM from previously dormant DTCs and patients with non-dormant BM. A total of 262 medical records were reviewed. In the univariate Cox regression analysis, the median survival of the dormant BM group was statistically longer than that of the non-dormant group (P=0.048); a trend towards a longer survival persisted after correcting for age, presence of breast cancer and treatment options (P=0.057), which are all factors known to influence the outcome. The improved outcome of these patients could be considered in models for prognostication. Moreover, the development of therapies able to eradicate dormant DTCs could provide a new promising strategy to prolong the survival of patients with a favorable prognosis [1].

[1]
Ferlini L, Peluso L, Lolli V, Gaspard N, Lefranc F. Prognosis of patients treated in a single neurosurgical reference centre for brain metastases caused by dormant disseminated cells. Oncol Lett. 2021 Jun;21(6):454. doi: 10.3892/ol.2021.12715. Epub 2021 Apr 8. PMID: 33907564; PMCID: PMC8063273.