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Alpha-N-acetylgalactosaminidase levels in cancer patients are affected by Vitamin D binding protein-derived macrophage activating factor

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It is well assessed that alpha-N-acetylgalactosaminidase (nagalase) accumulates in serum of cancer patients and is responsible for deglycosylation of vitamin D binding protein, which is the precursor of vitamin D binding protein-derived macrophage activating factor (GcMAF), eventually leading to immunodeficiency in advanced cancer patients. The increase in nagalase activity in cancer patients is due to the fact that cancer cells release nagalase, and nagalase activity reflects tumour burden, aggressiveness and progression of the disease up to the point that determination of nagalase activity is a non-invasive way of evaluation of cancer severity. Here we report the observation of a series of clinical cases describing the results obtained administering GcMAF to patients with diverse types of cancers. In all cases, GcMAF treatment was initiated at late stages of tumour progression. The response to GcMAF was robust. All patients (n= 20) presented with nagalase levels well above the threshold of normal values (2.84 ± 0.26 nM/min/mg). All patients, but one, showed significant decrease of nagalase levels following GcMAF weekly injections (1.59 ± 0.17. $p<0.01$). Nagalase decrease was associated with improved clinical conditions. No adverse side effects were reported. The observation reported here confirm and extend the results presented in [1] and open the way to further studies aimed at assessing the precise role and indications for GcMAF in the immunotherapy of cancer.

References

[1] Yamamoto N et al. (2008) Immunotherapy of metastatic breast cancer patients with vitamin D-binding protein-derived macrophage activating factor (GcMAF). Int J Cancer 122: 461-7.

Key words
Vitamin D, macrophages, cancer, immunodeficiency.