Circulating Tumor Cells: From Fiction to Reality

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Clinical Image

Described for the first time by Ashworth in 1869 [1], circulating tumor cells are considered silent predictors of metastasis [2]. Indeed, their generation is a fundamental prerequisite to the tumors metastatic process [3], making them a non-invasive appealing tool for precision medicine.

Although a flawless method has not yet been identified, the countless technological efforts to detect isolate and characterize CTCs [4], make them suitable for clinical applications and promising for future translational uses.

To date, though the predictive significance of CTCs is still under debate [5], robust data demonstrate that such cells have an undoubted prognostic value in patients with solid tumors, such as breast [6], colorectal [7], prostate [8] and gastric cancers [9]. Furthermore, the possibility to find CTCs even in non-metastatic [10] as well as rare tumors, such as sarcoma [11,12] or hemangiopericytoma [13], opens new horizons toward a best understanding of disease biology in order “to fight the enemy with the right weapons”.

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References

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