

Can the hypothesized “erythrocyte associated necrosis factor” be applied to the prevention of metastases?

Abstract

The thoracic duct has been relevant to research from the 1798 days of Sir Astley Cooper. A recent development is that lung cancer cells being transported in it exhibited necrosis when commingled with erythrocytes. This natural phenomenon has been attributed to a Factor named personally as the “Erythrocyte Associated Necrosis Factor” (EANF). Therefore, it is hypothesized that, in these days of the awakening of Translational Medicine, its researches may help to prevent successful deposition and growth of cancer cells.

Keywords: Thoracic duct; Lung cancer cells; Erythrocytes; Necrosis factor; Prevention; Pharmaceuticals

Volume 2 Issue 6 - 2015

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Received: July 17, 2015 | **Published:** July 20, 2015

Introduction

As far back as 1798, the astute Sir Astley Cooper¹ speculated that the thoracic duct must play an important role in the “human economy.” Recently, it so happened that this 45 cm long channel was obtained personally in one whole.² Following the serendipitous Swiss-roll method of coiling it, the panoramic appearance of cancer cells being transported along it at the moment of death was striking.³ Moreover, the phenomenon of necrosis of these cells, when commingled with erythrocytes, stood out to be recognized as it were. Little wonder that the underlying natural necrosis phenomenon was attributed to a Factor named personally as the “Erythrocyte Associated Necrosis Factor” (EANF).⁴

Translational medicine

In this context, can Translational Medicine, which now blazes trails in cancer research,⁵ and is much boosted financially,⁶ be involved in cancer destruction? Now, consider a salient view. Cheever et al.,⁷ were hopeful that “These findings reflect the current status of the cancer vaccine field, highlight the possibility that additional organized efforts and funding would accelerate the development of therapeutically effective cancer vaccines and accentuate the need for prioritization.” However, prioritization should go beyond vaccines. In the words of Mazzocca & Carloni,⁸ “the future pharmacological challenge will be to combine drugs that target different aspects of the multistep metastatic process.” As I see it, the footsteps of Nature in the microenvironment of the thoracic duct, namely, the striking necrosis of cancer cells when commingled with red cells, should be painstakingly studied.⁹ In particular, since the new technique of intravital video microscopy¹⁰ can be used to view both lively and necrotic cancer cells, the retrieval of these two scientific subsets cannot but aid in future replication exercises aimed at cancer cure. Little wonder that mankind has for centuries sought the drug cure of cancer.^{11,12} Today, we ought to grapple scientifically with the above necrotic pabulum which is readily available in the thoracic ducts of consenting patients.¹³ Therefore, what are the prospects?

In the words of Sleeman and Steeg,¹⁴ “Effective translational research is urgently required, yet is not always easy to achieve.” In like manner, Okumura et al.,¹⁵ opined that “In recent years, a substantial

research effort has aimed at developing new anticancer therapies with maximal effects and minimal adverse effects.”

Consequently, let me turn to hypotheses. First, in a *Lancet* 1963 paper,¹⁶ I argued that the fate of the circulating cancer cells is linked with their necrosis in the blood stream. Secondly, necrosis so strongly featured in the thoracic duct that what I named as EANF was brought in as an indicator of the footsteps of Nature. Therefore, its serious scrutiny should include the exploitation of chemotherapy. In fact, in the opinion of Poste,¹⁷ “Cancer therapy and chemotherapy in particular, is entering a critical period.”

Conclusion

Concerning such a critical period, let the EANF angle be brought to bear on the prevailing problem of target therapy. Indeed, let me suggest that it should be experimented along the lines of the promisingly positive researches in the field of pharmaceutical science invention.

Acknowledgments

None.

Conflicts of interest

The authors have no financial conflicts of interest to declare.

Funding

None.

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