CHRONIC LYMPHOCYTIC LEUKEMIA - DERIVED EXTRACELLULAR VESICLES MODULATE MONOCYTES TO BECOME CLL SUPPORTIVE CELLS

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Introduction

Chronic Lymphocytic Leukemia (CLL) is typified by the supportive interactions provided by environmental cells. Released from all cells, extracellular vesicles (EVs) are nanosized vesicles containing a variety of biologically active molecules that travel in body fluids and transfer their molecular cargo to bystander cells. We have recently shown that EVs secreted from CLL cells recruit endothelial cells to become CLL supportive cells.

Objectives

In the current study we describe the phenotypic and phosphoproteins landscape effects of CLL- derived EVs on monocytes. According to our hypothesis, CLL- EVs "educate" monocytes to become CLL-supportive cells.

Methods

We isolated and characterized EVs from B-CLL cells (CD5+) from patients and monocytes (CD14+) from blood samples of healthy donors. Monocyte cells were exposed to EVs derived from CLL cells, the pick EVs uptake being 24h from exosomal exposure.

Results

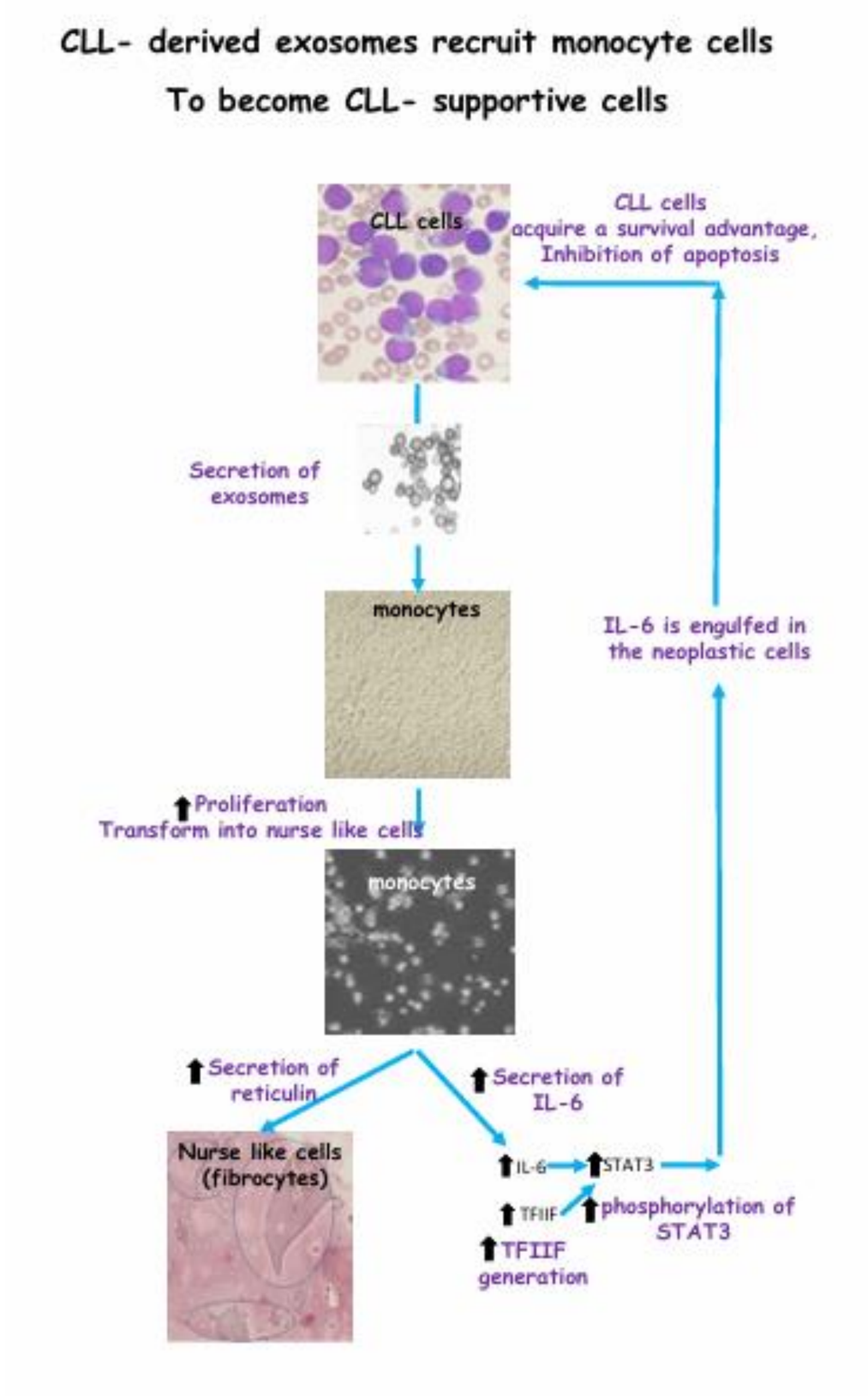
- EVs exposure induced morphological changes in the recipient monocytes, transforming some of them into fibrocyte- like cells, which secrete reticulin.
- several proteins changed their phosphorylation status in response to CLL- Evs.
- CLL- derived EVs and ectopic expression of TFIIF gene in monocytes increased the secretion of IL-6 to the growth medium by these cells ,by 22.5-fold in a STAT3 dependent manner.
- We have also identified transformation of CD5 negative monocyte cells into CD5 positive cells post EVs exposure

Summary

Our study provides another evidence regarding the active recruitment of monocytes by CLL cells to acquire a survival advantage.

References

1. Uziel O, Lipshtein L, Sarsor Z, Beery E, Bogen S, Lahav M, Regev A, Kliminski V, Sharan R, Gervits A, Signorini LF, Shimony S, Raanani P, Rozovski U. Chronic Lymphocytic Leukemia (CLL)-Derived Extracellular Vesicles Educate Endothelial Cells to Become IL-6-Producing, CLL-Supportive Cells. Biomedicines. 2024; 12: 1381.



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