THROMBUS LYMPHOCYTE PHENOTYPING IN ACUTE MYOCARDIAL INFARCTION

Poster Contributions
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Background: Immune system activation is documented in patients with ST elevation myocardial infarction (STEMI). To discover whether the freshly burst plaque presents a distinctive pattern of lymphocyte phenotyping we compared lymphocytes in coronary thrombus (CT) with those of peripheral blood (PB) in STEMI patients submitted to primary angioplasty within 12 hours from symptom onset.

Methods: The filtered, aspirated CT of 46 consecutive STEMI patients were dipped in culture medium (RPMI 1640) enriched with 10% foetal calf serum and then minced with scalpels in a Petri dish and re-suspended in culture medium. Lymphocytes from PB and CT were compared for B, T and natural killer (NK) cells as well as subpopulations of T cells by Flow Cytometry.

Results: The aspirated CT contain higher percentages of NKT cells (CD3+CD16+56+) and lower percentages of B cells (CD19+) than PB (Figure). The NKT cells were significantly higher in ‘fresh’ (≤ 3 hours) than in ‘aged’ thrombi (>3/≤12 hours) and their concentration was correlated with LDL cholesterol (r=0.39; p < 0.008).

Conclusions: In the acute phase of STEMI, NKT lymphocytes (CD3+CD16+56+) home at the site of coronary occlusion and their concentration correlates with LDL-cholesterol levels. Higher concentration of NKT associated with reduced concentration of B cells (CD19+) - which protect against atherosclerosis - would support the hypothesis that an imbalance in the immune system leads to destabilization of the atheroma and resultant thrombosis.