

Frequency and Implications of Natural Killer and Natural Killer T Cells in Hepatocellular Carcinoma

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A complex role of the immune system has been highlighted in the development and progression of hepatocellular carcinoma (HCC). Natural Killer cells (NK) and natural killer T cells (NKT) cells are among the innate immune lymphocytes that predominate in the liver and can prevent tumor growth and metastasis. The aim of the study was to measure the percentages of NK and NKT cells among a sample of Egyptian patients with HCC and to find the association between their frequencies and disease progression. The study included 2 groups; the HCC patient group (n=40) and the healthy control group (n=20). Blood samples were drawn from all subjects for complete blood picture, liver enzymes and alpha fetoprotein serum level measurement. Flow cytometric analysis was performed for CD3 and CD16/56 for determining the percentages of NK and NKT cells. The frequencies of NK cells and NKT cells were significantly decreased in HCC patients (6.58 ± 1.76 and 5.26 ± 1.13 respectively) as compared to healthy controls (9.01 ± 1.62 and 6.88 ± 1.88 respectively) ($P < 0.001$ and 0.0008 respectively) and in HCC patients with metastasis (6.01 ± 1.11 and 5.07 ± 1.10 respectively) than HCC patients without metastasis (7.75 ± 1.98 and 5.89 ± 0.88 respectively) ($P = 0.004$ and 0.03 respectively). We concluded that the reduced percentages of NK cells and NKT cells in HCC patients especially in those with metastasis point to their important roles in the occurrence and progression of HCC.