Prognostic Significance of CD68, CD163 and Folate receptor beta Positive Macrophage in Hepatocellular Carcinoma

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論 文 要 旨

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Abstract

Cluster of differentiation (CD)68 may be used as a pan-macrophage or M1 marker, whereas CD163 may be used as an M2 marker. Furthermore, folate receptor (FR)ß exhibits an M2-like functional profile. In the present study, CD68 and CD163 were used to evaluate and classify tumor-associated macrophages (TAMs). The expression of CD68, CD163 and FRß by TAMs in hepatocellular carcinoma (HCC) Tissues was investigated. Samples from 105 patients with HCC were evaluated using immunohistochemistry. The results revealed that CD68 and CD163 overexpression was associated with a worse prognosis. The number of CD68 positive cells observed was significantly higher in patients with stage IV cancer. Furthermore, an increase in CD68 positive cells was observed in patients with median tumor size ≥3.5 cm and in patients with poorly differentiated HCC. The number of CD163 positive cells was also significantly increased in patients with median tumor size ≥3.5 cm and in those with poorly differentiated HCC. A low CD163/68 ratio was correlated with a worse outcome. The ratio was significantly lower in patients with stage IV cancer, patients with des-gamma-carboxy prothrombin abnormalities, patients with blood vessel infiltration and patients with intrahepatic metastasis. The number of FRß positive cells was not correlated with clinicopathological features. The results of the present study indicate that overexpression of CD68 and CD163 may be associated with a worse patient outcome. The evaluation of CD68 and CD163 positive cells in a cancer microenvironment is controversial. TAMs are not simply cells with single markers or restricted M1 or M2 phenotypes; they are more diverse and heterogeneous. Further studies are required to determine the cross-interaction between diverse TAMs and the tumor microenvironment.

Keywords: cluster of differentiation 163; cluster of differentiation 68; folate receptor ß; hepatocellular carcinoma; macrophage.

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