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Expression of cancer testis antigens and its correlation with clinicopathological parameters in hepatocellular carcinoma

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Background

Many therapies such as surgery, chemical or physical approaches have been used for treatment of HCC; however, the outcome is still poor. Cancer immunotherapy is considered to be one of the promising strategies in recent years.

Methods

Expression of CTAs genes including MAGE A3, MAGE A4, MAGE C2 and NY-ESO-1 genes was detected with reverse transcription polymerase chain reaction (RT-PCR) in HCC tissues and corresponding adjacent non-cancerous tissues from 71 HCC patients.

Results

87.3% of HCC tumor tissue samples expressed at least 1 CTAs. HCC adjacent non-cancerous tissues did not express CTAs. 78.9% tumor tissue samples expressed MAGE-A3 mRNA, 33.8% samples expressed MAGE-A4 mRNA, 74.6% samples expressed MAGE-C2 mRNA and 14.1% samples expressed NY-ESO-1 mRNA. The expression of CTAs showed correlation with Ki67(r=0.27, P=0.02) and tumor stages (r=0.31, P=0.01), no correlation with clinical parameters such as age, gender, ALT, HLA-A2 positive, CA125, CA199, HBV or HCV infection and tumor size (P>0.05). The expression of MAGE-A3 showed correlation with the high expressions of CEA in serum (r=0.30, P=0.03), AFP in serum (r=0.26, P=0.03) and lymph node metastases (r=0.30, P=0.01).

Table 1 Clinicopathological characteristics of the HCC patients

Characteristics	No.patients	%
Gender	71	
Male	54	76.1
Female	17	23.9
Age(y)		
<55	47	66.2
≥55	24	33.8
ALT(IU/ml)		
<80	61	85.9
≥80	10	14.1
HLA A2		
Positive	41	57.7
Negative	30	42.3
AFP(ng/ml)		
≤10	30	42.3
>10	41	57.7
Tumor size(cm)		
≤5	43	60.6
>5	28	39.4
TNM classification		
I or II	34	47.9
III or IV	37	52.1
Etiology		
HBV	45	63.4
HCV	6	8.5
No	20	28.1
Ki67(%)		

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Table 1 Clinicopathological characteristics of the HCC patients *(Continued)*

≤40	30	42.3
>40	41	57.7
CTAs		
Positive	62	87.3
Negative	9	12.7
Average age(year)	53.7±11.5	

Conclusion

Our findings demonstrate the cancer testis expression of CTAs genes show correlations with tumor stages and proliferation and may represent useful targets for tumor specific immunotherapy in HCC patients.

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