MAGE-1 AND MAGE-3 MRNA EXPRESSIONS AS MOLECULAR BIOMARKERS IN PATIENTS WITH HEPATITIS C VIRUS-RELATED HEPATOCELLULAR CARCINOMA

doi:10.1136/gut.2011.239301.484

H A El Aggan,1,* S Mahmoud,1 W El Delgawy,2 N El Deeb,2 R Shams El Din2 1Department of Medicine (Hepatobiliary Unit), Alexandria, Egypt; 2Department of Medical Biochemistry, Alexandria, Egypt; 3Department of Pathology, Faculty of Medicine, Alexandria, Egypt

Introduction The melanoma antigen (MAGE) family members are tumour-specific antigens exclusively expressed in neoplastic cells. Therefore, the present work was designed to study the expression of MAGE-1 and MAGE-3 mRNAs in the peripheral blood and cancerous tissues of patients with hepatitis C virus (HCV)-related hepatocellular carcinoma (HCC).

Methods 30 patients with HCV-related cirrhosis (15 patients with HCC and 15 patients without HCC) and 15 healthy subjects were enrolled in the present study. Expression of MAGE-1 and MAGE-3 mRNAs in peripheral blood samples, HCC specimens and surrounding non-neoplastic liver tissues, were studied by a reverse-transcription PCR (RT-PCR) with the specific primers after RNA extraction. The sensitivity and specificity of MAGE-1 and MAGE-3 mRNAs as markers for diagnosis of HCC have been assessed by plotting a receiver-operating characteristic (ROC) curve.

Results In HCC patients, the positive rate of MAGE-1 and MAGE-3 mRNA expression was 53.3% and 33.3% in peripheral blood samples respectively, while the positive rate was 53.3% and 40.0% in HCC tissue samples, respectively. By contrast, MAGE-1 and MAGE-3 mRNA were not detected in the adjacent non-neoplastic liver tissues or in the peripheral blood samples of cirrhotic patients without HCC and healthy subjects. No relationship was found between MAGE-1 and
MAGE-3 mRNA expression and age, gender, Child-Pugh score, tumour size, clinical stage and histopathological grade (p>0.05). The sensitivity and specificity of MAGE-1 mRNA as a marker for the diagnosis of HCC was 53.3% and 100% respectively while MAGE-3 mRNA has a sensitivity of 40% and a specificity of 100%.

**Conclusion** MAGE-1 and MAGE-3 mRNA are highly expressed in HCV-related HCCs and may play a role in hepatocarcinogenesis. These tumour-specific antigens can be used as molecular markers for early diagnosis of HCC and detection of disseminated tumour cells and may act as a potential target for immunotherapy in HCC patients.

**Competing interests** None.

**Keywords** hepatitis C virus, hepatocellular carcinoma, melanoma antigen genes.
MAGE-1 and MAGE-3 mRNA expressions as molecular biomarkers in patients with hepatitis C virus-related hepatocellular carcinoma

H A El Aggan, *, S Mahmoud, W El Delgawy, N El Deeb and R Shams El Din

*Gut* 2011 60: A229-A230
doi: 10.1136/gut.2011.239301.484

Updated information and services can be found at:
http://gut.bmj.com/content/60/Suppl_1/A229.2

**Email alerting service**

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/