

Very high elevation of CA19-9 level in a patient with steatosis

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Introduction

Carbohydrate antigen 19-9 (CA19-9) has been used as an additional diagnostic test for adenocarcinoma of the upper gastro-intestinal tract (1). When a cut-off value of 1000 U/ml is used, its specificity approaches 100% and it is considered as the "gold standard" marker for malignant biliary obstruction resulting from pancreatic cancer (2). We report on a case of a patient with steatosis and very high elevation of CA 19-9 level which was correlated with gamma-glutamyltranspeptidase value.

Case report

This 45 year-old woman was admitted to the hospital because of fatigue and diarrhoea which was attributed to metformin. Her past medical history included hypertension, hypothyroidism and type 2 diabetes mellitus. She took atenolol, thyroxin, telmisartan and metformin. She had been drinking 7 pints of beer a day for many years. Physical examination was banal except for obesity (body mass index was 32 kg/m²) present for 10 years. Laboratory investigations revealed an increased concentrations of aspartate aminotransferase (129 U/l, normal < 53), alanine aminotransferase (115 U/l, normal < 53), alkaline phosphatase (173 U/l, normal 35-106), gamma-glutamyltranspeptidase (2956 U/l, normal < 36). Amylase and lipase levels were within the normal range. Ca 19-9 level was 1930 U/ml (nl < 37).

Serological markers for hepatitis A,B C, CMV and EBV were negative.

Autoantibodies (smooth-muscle, mitochondrial and LKM) were negative.

Glycated haemoglobin was 9% (normal < 6%). Plasma bilirubin level was normal.

An ultrasonography and a computed tomography showed fatty change without focal lesion or dilated biliary ducts. A liver biopsy revealed steatosis with Mallory's bodies and periportal fibrosis which was suggestive of alcoholic liver changes. Evolution of CA19-9, alkaline phosphatase (AP) and gamma-glutamyltranspeptidase (γ GT) levels after alcohol withdrawal is reported in Table 1. We observed a statistically significant correlation (linear regression) between γ GT and CA 19-9 level ($r = 0.978$) ($p < 0.01$) and between AP and γ GT level ($r = 0.874$) ($p < 0.05$).

Table 1. — Evolution of Gamma-glutamyltranspeptidase and CA 19-9 level

Value	Admission	D + 3	D + 9	D + 13	D + 43
Alanine amino-transferase (U/l)	129	112	65	105	77
Aspartate amino-transferase (U/l)	115	91	53	50	54
Alkaline phosphatase (U/l)	173	148	112	117	38
G-GT (U/l)	2956	2364	1357	1076	831
CA 19-9 (U/ml)	1930	1800	720	600	107

Conclusion

Glycoprotein CA 19-9 is synthesized by normal cells of several tissues including pancreatic and biliary cells. Its usefulness has been validated in the diagnosis and survey of pancreatic and gastric carcinoma (2). The concentration of CA19-9 found in serum is a balance between the rate of production of the antigen by both malignant and normal tissues and the rate at which it is cleared from the blood. Very high elevation of CA 19-9 in a case of steatosis is rarely found in the literature (4-6). It may also be seen in patients with benign obstructive jaundice but rarely at level above 1000 U/ml (3). This case report shows that a marked increase of CA 19-9 level may be observed in severe alcoholic liver disease in the absence of gastric and pancreatic carcinoma. We conclude that CA 19-9 should be used carefully in patients with severe alcoholic liver disease.

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