LETTER TO THE EDITOR

Biomarkers of malignant ascites—a myth or reality

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Dear Editor,

The original article "Biomarkers of malignant ascites—a myth or reality" published in *MJAFI* in April 2011 (*MJAFI* 2011;67: 108–112) was interesting and we would like to offer these following comments:

1. Elevated serum ferritin is detected in various malignancies. The high serum ferritin concentration has been attributed to either reticuloendothelial cell disturbance, release of ferritin from damaged cells or synthesis of ferritin by neoplastic cells.
2. Patients with extensive tumours show the highest ferritin level associated with tumour progression. The ferritin levels are roughly correlated with tumour mass and behave as non-specific markers.
3. In most cases of malignancy, even in cases not presenting as ascites, the serum ferritin level will be high; if at all the diagnosis turns out to be ascites then the ascitic fluid ferritin will also be high. The author has not commented on cases in which ascites is due to non-malignant causes in patients with known malignancy. Also when the ascites is of the mixed type, it bears no relevance.
4. Patients with high protein non-cirrhotic ascites almost always have high ascitic fibronectin and cholesterol elevations despite the absence of malignancy.[1]
5. In an earlier study, carcinoembryonic antigen (CEA), similar to this ascitic fluid, was proposed as a helpful marker for detecting malignant ascites; but then the proposal was flawed due to lack of evidence.[2]
6. In our view low serum-ascites albumin gradient (SAAG) and cytological examination confirmation in case of peritoneal carcinomatosis, and high SAAG and serum alphafetoprotein (AFP) in case of hepatocellular carcinoma and metastasis would be the ideal screening method to rule out malignant ascites. The high serum ferritin and ascitic fluid ferritin will only give a clue for malignancy.

REFERENCES

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REPLY

I agree with the first two points of the reader that ferritin is a non-specific marker of malignancy. In our group of malignant ascites, patients had peritoneal carcinomatosis or hepatic metastasis which was proven either by a computed tomography (CT) scan or biopsy. Our cases of non-malignant ascites were cirrhosis due to chronic hepatitis in whom hepatocellular carcinoma was ruled out, alcoholic liver disease, end stage kidney disease, and congestive cardiac failure. We had ruled out other causes of ascites like tuberculosis, pancreatic ascites, and connective tissue diseases. We did not include any of the cases of mixed ascites as this would have confounded our findings.

Prieto et al state a diagnostic accuracy of 97% for detection of malignant ascites by ascitic fluid cholesterol and fibronectin.[1] In our study, ascitic fluid cholesterol had a sensitivity and specificity of 70% and 60%, respectively.

Konturas et al in their study have quoted a sensitivity of 97% and specificity of 100% for ferritin in the diagnosis of malignant ascites.[2] Satz et al have also confirmed in their study that ascitic fluid ferritin is a more accurate marker of malignant ascites compared to SAAG.[3] Ferritin indeed is a non-specific marker of malignancy but the fact remains that its sensitivity for detection of malignancy is very high.

Ferritin is routinely done for work up of anaemia even in peripheral hospitals but AFP is not done as the demand for AFP is very occasional although the testing methodology for both is either enzyme-linked immunosorbent assay (ELISA) or chemiluminescence.

The premise on which the study was designed was the fact that cytological examination has a low sensitivity and high specificity and requires skill as malignant cells in the ascitic fluid mimic the mesothelial cells. If ascitic fluid ferritin, which has a high sensitivity and low specificity is done on ascitic fluid as a screening procedure then the work up of the patient

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