Acute liver failure in a patient with hairy cell leukemia

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ABSTRACT
Acute liver failure as a manifestation of primary non-Hodgkin’s lymphoma is a rare phenomenon with a fatal prognosis. Hairy cell leukemia (HCL) is an uncommon chronic B-cell lymphoproliferative disorder, representing about 2 percent of all leukemias. We report a 78-year-old patient with a history of hairy cell leukemia since 10 years, presenting with fulminant liver failure due to massive liver infiltration. He have reviewed several cases of infiltration of the liver by hematological malignancies, but we only have found after a review in MEDLINE between 1980 and 2006, one case of acute liver failure in a patient with hepatic invasion by hairy cell leukemia.

FALLO HEPÁTICO AGUDO EN UN PACIENTE CON TRICOLEUCEMIA
La infiltración hepática en las neoplasias hematológicas es frecuente, pero el desarrollo de insuficiencia hepática aguda secundaria es una manifestación poco común, con un pronóstico grave. La leucemia de células peludas (tricoleucemia) es un tipo de trastorno linfoproliferativo de células B poco frecuente, que representa alrededor del 2% de todas las leucemias. Vamos a describir el caso de un varón de 78 años de edad, diagnosticado de tricoleucemia, de 10 años de evolución, que presentó una insuficiencia hepática aguda secundaria a la infiltración hepática masiva por su enfermedad hematológica. Hemos realizado una búsqueda bibliográfica en MEDLINE desde 1980 hasta 2006 sobre casos de infiltración hepática por enfermedades hematológicas, y tan sólo hemos encontrado un caso de hepatitis fulminante en el contexto de un paciente con leucemia de células peludas.

CASE REPORT
A 78-year-old man with a ten-year history of HCL, a silent clinic, without treatment required. He was in treatment with digoxin, acénicum-à, diltiazem and flutamide for a prostatic cancer. The day of admission the patient was found to be lethargic and weak. Few days after the patient developed asthenia. In his physical exam he was found to be oriented, bradipsiquia, a tremor on extremities, blood pressure of 124/96 mmHg, and a temperature of 38.2 ºC. The abdomen was painful, cereza at right side, with splenomegaly.

Admission laboratory tests showed creatinine 1.7 mg/dl, blood glucose nitrogen 41.2 mg/dl, sodium 129 mmol/l, potassium 4.4 mmol/l, calcium 1.4 mg/ml, total bilirubin 3.6 mg/dl, direct bilirubin 1.7 mg/ml, aspartate aminotransferase 1151 IU/l, alanine aminotransferase 799 IU/l, liver biopsy was obtained (fig. 1).

Evolution of liver function

<table>
<thead>
<tr>
<th></th>
<th>First day</th>
<th>Second day</th>
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<tbody>
<tr>
<td>Creatinine (mg/dl)</td>
<td>2.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Total bilirubin (mg/dl)</td>
<td>97</td>
<td>13.3</td>
</tr>
<tr>
<td>Hemoglobin (g/dl)</td>
<td>8.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Aspartate aminotransferase (IU/l)</td>
<td>3090</td>
<td>7487</td>
</tr>
<tr>
<td>Alanine aminotransferase (IU/l)</td>
<td>1928</td>
<td>41.35</td>
</tr>
<tr>
<td>Palmitos (µl)</td>
<td>59 000</td>
<td>34 000</td>
</tr>
<tr>
<td>IQ (%)</td>
<td>15</td>
<td>10</td>
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DISCUSSION
Fulminant hepatic failure carries a high mortality. It can result from a wide variety of causes, among which viral or toxin-induced hepatitis are the most common. Other less frequent etiologies are vascular causes, metabolic disorders, malignant infiltration of the liver, sepsis, heat stroke and autoimmune hepatitis. We rejected a viral hepatitis by serologic tests. He was in treatment with flutamide since two years and diltiazem⁵. There are several serious.
cases of hepatotoxicity due to these drugs. There are a few reports of acute hepatic injury including granulomatous hepatitis with the use of diltiazem. In the review made by Wysowski et al the post-mortem examination of the liver showed massive hepatocellular necrosis, collapse of lobules, ductal proliferation, and cholestasis without inflammatory cells. The findings in the liver biopsy in our patient were not compatible with these alterations. Hepatic invasion by malignant lymphoma frequently affects the liver, but it is a rare cause of liver failure and usually has a fatal prognosis. We only have found after a review one case of acute liver failure in a patient with hepatic invasion by HCL. As in this case, acute advanced liver failure and death shortly after the onset of symptoms. Liver biopsy of both demonstrated extensive portal and intraalobular hairy cell infiltration with loss of normal architecture. Shehab et al have made a review of 25 cases of acute liver failure due to infiltration of the liver by hematologic malignancies. All presented a clinic and biochemistry presentation compatible, without previous hepatic pathology and confirmation of microscopic infiltration of the hepatic sinusoids. The median survival is about 11 days. In another review of 25 similar patients, the average time of survival was about 7-8 days.

Furthermore ischemia and injury due to cytokines released have been proposed as the mechanism responsible. TNF-α, interleukin (IL-1, IL-2, IL-6) and several eicosanoids active neutrophiles, endothelial cells of the sinusoids hepatic and kupffer cells induced necrosis of the hepatocytes.

In conclusion, the association between HCL and acute liver failure is unusual, otherwise there are several mechanisms that can explain something more than a coincidence.

REFERENCES

Fig. 1. Liver infiltration by hairy cell leukemia.