

CD3/CD25-positive and CD3/CDHLA-DR-positive lymphocytes was noted in no responding/relapsing patients in relation to responding subjects. The results obtained in the splenectomized patients (responding and non responding/relapsing) were then compared with the data obtained in 15 non splenectomized ATP patients. Statistical analysis showed that there are no significant differences between lymphocyte subset concentrations of normal subjects and of non splenectomized ATP patients; a significant increase of T-lymphocytes and the relative subpopulations in the responding and no responding patients was observed compared to the no splenectomized patients, while the CD3/CD25-positive lymphocytes were significantly higher only in the non responding/relapsing group, as compared to no splenectomized patients.

In our patients an increase of absolute concentrations of T-subpopulation lymphocytes and an activation of T-lymphocyte system were observed in the different groups of splenectomized ATP patients, irrespective of the clinical results of the surgical operation. A similar result was obtained comparing the various groups of splenectomized patients to no splenectomized, no treated subjects affected by ATP, with platelet levels of $> 50 \times 10^9/L$ and $< 150 \times 10^9/L$.

In conclusion, two possible modifications of the lymphocyte system might occur in ATP splenectomized patients: an increase of the T-lymphocyte subpopulations, a result more evident in no responding or relapsing subjects, and / or an alteration in the NK cell activity in spite of a normal their concentration.

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Autoimmune thrombocytopenic purpura, splenectomy, lymphocyte subsets.

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Abnormal bleeding in a patient with chronic lymphocytic leukemia and acute hepatitis due to a circulating heparin-like anticoagulant

We report a case of a CLL patient with a history of abnormal bleeding. Laboratory tests were compatible with acute hepatitis. Coagulation assays were normal except a prolonged thrombin time (TT). The study of prolonged TT suggested a heparin-like anticoagulant activity as the cause. The TT was reduced progressively as hepatic enzymes returned to a normal range.

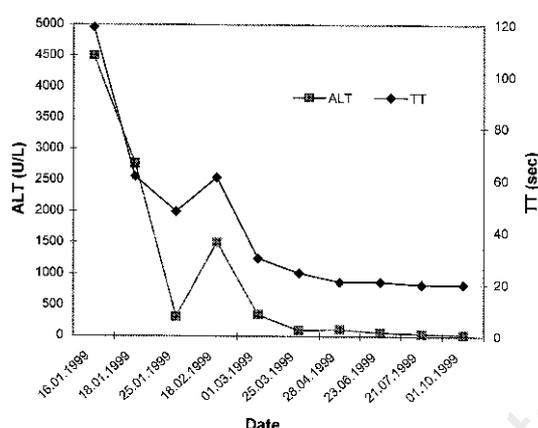
Sir,

A 56-year-old man with a refractory CLL was admitted to the hospital because of fever secondary to pneumococcal sepsis. This was resolved after treatment with cephalexin. On the fifth hospital day the patient became icteric and laboratory tests showed altered liver function compatible with acute hepatitis. The HBsAg, anti-HBs and anti-HBc were positives. The patient was discharged home and fifteen days later he returns to the hospital because epistaxis and a large left costal tumor and needed rehospitalization for epistaxis. The patient had not past history of a bleeding disorder despite maintained low platelet count. On physical examination, petechiae were present on the trunk and extremities, left costal tumoration compatible with hematoma, generalised lymphadenopathy and hepatosplenomegaly. Laboratory studies showed a haemoglobin level of 5.9 g/dL; leukocyte count $191 \times 10^9/L$, of which 75% were lymphocytes; platelet count $24 \times 10^9/L$; AST 7400 U/L; ALT 4500 U/L; total bilirubine, 3 mg/L. There was no monoclonal protein on serum immunoelectrophoresis. A thoracic ultrasonography showed an image compatible with costal hematoma. The patient was treated with platelet transfusion, ϵ -aminocaproic, steroids and vitamin K with control of bleeding syndrome. No heparin had been administered at any time.

Laboratory coagulation tests are summarised in Table 1. All coagulation assays were done in duplicate. Despite his mucocutaneous bleeding history, only the thrombin time (TT) was abnormal (with exception of first study, previous to vitamin K administration). The prolonged TT was partially corrected in the mixing study but totally corrected with toluidine blue and a heparinase I (Hepzyme™ Dade®). A protamine titration suggested the presence of a heparin-like molecule. The in vitro addition of 50 $\mu\text{g}/\text{mL}$ of protamine sulfate corrected the prolonged TT. Results of coagulation studies repeated a week later remained unchanged. The TT was

Table 1. Initial laboratory coagulation study.

	Patient	Reference range
PT (sec)	13.5	10-14
APTT (sec)	36	26-36
TT (sec)	119	16-21
Reptilase time (sec)	20	16-22
Clauss Fibrinogen (mg/dL)	329	180-350
D-Dimers (µg/L)	258	250-325
DRVVT (seg)	36	<45
Factor XIII activity (%)	92	75-130
Antitrombin activity (%)	80	75-125
Factor V (%)	87	70-140
Factor VII (%)	91	70-120
Factor VIII (%)	99	70-140
Factor X (%)	119	70-120

**Figure 1. ALT and TT levels. TT levels gradually decreased with ALT levels.**

reduced progressively as hepatic enzymes became in normal range reaching normal values after 3 months (Figure 1).

The TT may be prolonged for several reasons, including dysfibrinogenemia, decreased levels of fibrinogen, increased fibrin(ogen) degradation products (FDPs) and heparin or other circulating anticoagulants. Our patient had normal amounts of clottable fibrinogen and the FDPs levels were not increased. The TT was corrected with the addition of protamine sulfate, this suggested a heparin-like anticoagulant activity as the cause. Clinically significant endogenous circulating heparin-like anticoagulant activity has been associated with haematological malignancies (multiple myeloma, systemic mastocytosis, and acute monoclastic leukemia)¹ and in association with solid tumors.² Recently, it has been described an heparinoid syndrome in association with hepatocellular carcinoma.³ Presumably, the tumor produced circulant heparan sulfate. Liver is the major production site of heparin or heparin-like factors.⁴ Acute hepatitis is associated with a variable degree of liver cell damage. It is possible that necrosed hepatic cell released heparinoid substances but it would be difficult to distinguish this putative cause from other alternative as circulating enzymes may cleave heparan chains from

endothelial cells lining the circulatory system.

We described the first case of a patient diagnosed of CLL who developed a heparinoid syndrome associated with acute hepatitis that resolved when hepatitis.

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Effect of oral anticoagulant therapy on fibrinolysis parameters in chronic non-rheumatic atrial fibrillation

Patients with chronic non-rheumatic atrial fibrillation show a hypercoagulable state and relative hypofibrinolytic function. After six months of anticoagulant therapy, an improvement on fibrinolytic function markers was detected.

Sir,

Non-rheumatic atrial fibrillation (NAF) predisposes to embolism. Patients with NAF have abnormalities in rheology and haemostatic factors that may contribute to this risk. Oral anticoagulation is effective in reducing risk of thromboembolism,¹ even the level of activity of the haemostatic system is reduced.² Fibrinolytic system in patients with atrial fibrillation (AF) has been little studied. Recently we found an impairment in the fibrinolytic function in these patients. We evaluate haemostatic parameters in 21 patients with NAF, before and after starting oral anticoagulation.

Twenty-one patients with NAF were studied, 13 men, 8 women, aged 62 (57-68). NAF was defined by absence of valvular disease. Nobody had received anticoagulant therapy before. The anticoagulation with acenocumarol, was managed according to the