itive (≥ 30% of reactive cells). As shown in Table 2, in the CD79b-positive group we observed more frequently both atypical morphology ($p<0.01$) and strong surface immunoglobulin density ($p<0.04$). On the other hand, no difference was found with respect to clinical stage, absolute peripheral blood lymphocytosis, pattern of bone marrow infiltration, FMC7 expression, or CD20/CD22 ABC values.

The relatively discordant data reported in the literature on the expression of CD79b antigen by neoplastic B-cells in CLL could be due to the different antibodies (SN8 or CB3-1 clones) or fluorocromes (PE or FITC) used as well as to the heterogeneous clinical, immunologic and laboratory features of patients evaluated. In this setting, we would like to stress that in our hands the substitution of CD79b for CD22 in the practical approach to the diagnosis of leukemic B-cell CLDs has improved our diagnostic ability from 90% to 92% of cases (data not shown). In other words, 8% of CLDs remained difficult to categorize from our immunologic point of view. Thus, further studies on larger numbers of patients with well-defined immunologic characteristics, and testing for both SN8 and CB3-1 clones (conjugated with several fluorocromes) need to be performed in order to obtain more useful informations on the significance of CD79b expression in B-CLL (and in other CLDs). Whether this information will be useful to classify CLDs better and to refine prognostic assessment remains to be established.

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Key words

CD79b, chronic lymphocytic leukemia, flow cytometry

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Non-gastrointestinal malt lymphomas: a study of 10 cases and comparison with 27 patients with gastrointestinal MALT lymphoma

The main clinical and analytic parameters, the response to treatment and survival in patients affected by gastrointestinal (n=27) or extradigestive (n=10) MALT lymphomas diagnosed in a period of 15 years in a single hospital were analyzed. The location, gastrointestinal or not, did not have any influence on either the response to treatment (85% vs 100%), overall survival (71% vs 100%) or disease-free survival (61% vs 89%) probabilities.

Sir,

Mucosa-associated lymphoid tissue (MALT) lymphomas are a subtype of extranodal lymphomas characterized by local involvement and good response to conservative therapy.[1-3] The stomach is the most common location of MALT lymphomas although other mucosal organs or tissues can be involved.[4,5] There are few studies focused on the influence of the localization of MALT lymphomas on prognosis. We analyzed the response to treatment and survival of a group of 10 patients diagnosed with extradigestive MALT lymphoma in a single hospital, and compared such features with those of 27 patients with gastrointestinal MALT lymphoma diagnosed in the same center and the same period.

From November 1983 to October 1998, 15 patients were diagnosed with extranodal lymphomas arising in non-gastrointestinal MALT sites. In 10, unequivocal criteria of MALT lymphoma were demonstrated. The mean (SD) age was 60±17 years and 7 patients were females. The main clinical and analytic parameters are reported in Table 1. The primary site involved was the parotid gland (6 patients), the conjunctiva (3 cases)

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Table 1. Characteristics of the patients with non-gastrointestinal and gastrointestinal MALT lymphoma.

	Non-gastrointestinal (n=10)	*Gastrointestinal (n=27)*
Age (yr)	60 (17)	57 (13)
Sex M/F	3/7	17/10
ECOG score		
≤ 1	10	22
> 1	–	5
Hb (g/L)	126 (11)	119 (23)
WBC (x10⁹/L)	6 (2.5)	9 (1)
Platelets (x10⁹/L)	221 (72)	273 (102)
ESR (mm/h)	25 (24)	27 (24)
LDH (U/L)	154 (38)	176 (65)
β_2-microglobulin (mg/L)	1.8 (0.7)*	1.6 (0.8)°
Stage		
IE	9	16
IIE	1	6
IIIE	–	–
IVE	–	5
Histologic grade		
Low	10	23
High	–	4

**Performed in 8 patients; °performed in 19 patients.*

and the breast (one patient). All the patients presented with localized stages, ECOG score 1, without B symptoms and all had low-grade MALT histology. Four patients had previous immune or inflammatory diseases: Sjögren's syndrome in 3 patients and recurrent parotitis in 1. Immunophenotypic study showed B-cell lymphoma in all cases. Radiotherapy was used in all conjunctival MALT lymphomas and in one patient with parotid MALT lymphoma. Chemotherapy with six cycles of standard CHOP regimen was administered to 3 patients with parotid MALT lymphoma. The 2 remaining cases with parotid involvement were treated with surgical resection followed by radiotherapy, and surgical resection, radiotherapy and CHOP, respectively. The patient with breast lymphoma was treated with surgical resection followed by CHOP chemotherapy. Complete remission (CR) was achieved in all the patients, but the patient with breast MALT lymphoma showed recurrence in the thyroid gland six months later. All the patients are currently alive and disease-free (6-year OS probability 100%, 6-year DFS 89% , 95% CI 60-100%).

In the same period, 52 patients were diagnosed with primary gastrointestinal lymphoma,[6] and in 27 a histologic diagnosis of MALT lymphoma was made (Table 1). The stomach was the organ involved in 19 cases, the small intestine in 6, the esophagus in 1 and the rectum in one patient. In most patients the MALT lymphoma was localized (16 cases in IE , 6 in IIE) and in 5 it was in stage IV at presentation. Only 4 patients had high-grade MALT lymphoma. Gastrectomy without adjuvant therapy was performed in 3 patients. Chemotherapy was the only therapy in 5 patients, whereas for the remaining 19 patients the treatment consisted in surgical resection followed by CHOP. CR was achieved in 23 out of 27 patients (85%) and partial response (PR) in 1. Three patients (11%) were refractory. Six patients relapsed (4 with gastric lymphoma, 1 with lymphoma of the rectum and 1 with lymphoma of the small intestine) but extradigestive involvement was not observed in any case at relapse. Of these cases, 3 achieved a second CR after chemotherapy, 2 died due to progressive disease and 1 died of cholangiocarcinoma. The OS probability at 6 years was 71% (95% CI:59-83%) and the DFS probability at 6 years was 61% (95% CI:46-76%).

In both groups of patients (gastrointestinal and non-gastrointestinal MALT lymphomas) the main clinical and biological parameters were comparable (Table 1) and no differences were observed in the response rate, DFS and OS.

Few studies have investigated the relation between the location of MALT lymphomas and their prognosis. In contrast to the results referred by Thieblemont *et al.*,[7] we found that the tendency to progress or relapse seemed to be more frequent in gastrointestinal than in non-gastrointestinal MALT lymphomas (22% vs 10%). The longer time to progression showed by Thieblemont *et al.* for gastrointestinal lymphomas has not been confirmed in our study. Although our data showed no significant differences in either DFS or OS between the two groups of patients, the slight survival advantage for non-gastrointestinal MALT lymphomas could be explained by their local involvement and good performance status at diagnosis. It is possible that the single center nature of our study and the inclusion of only patients with unequivocal histologic criteria of MALT lymphoma, could have had some influence on the results.

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Spontaneous rupture of spleen during peripheral blood stem cell mobilization in a patient with breast cancer

The administration of a combination of chemotherapy and cytokines (G-CSF or GM-GSF) is associated with a significantly increased efficacy of stem cell mobilization compared with either modality alone. In this paper we describe spontaneous splenic rupture during peripheral blood stem cell (PBSC) mobilization in a patient with breast cancer.

Sir,

We describe a case of spontaneous splenic rupture during peripheral blood stem cell (PBSC) mobilization in a 38-year old woman with resectable high-risk mammary carcinoma, treated accordingly with high-dose sequential (HDS) adjuvant chemotherapy.[1] After administration of high-dose cyclophosphamide (CTX) 7 g/m^2, the patient received recombinant human (rh) granulocyte colony-stimulating factor (G-CSF) 5 mg/kg/day subcutaneously beginning 1 day after the administration of CTX until the day of leukapheresis.

Physical examination prior to the course of CTX + G-CSF did not demonstrate palpable splenomegaly. Serology demonstrated no previous exposure to hepatitis A, B and C, Epstein Barr virus, Herpes virus types 1 and 2, cytomegalovirus, HIV-1, or toxoplasma.

A right subclavian vein double lumen apheresis catheter (Quinton Instrument Corp.), was placed on day-1, and the patient underwent apheresis on day 12. The white blood count on day 12 was 39.6 $\times 10^9$/L, the platelet count was 110×10^9/L.

Twenty-four hours following leukapheresis the patient experienced left-sided abdominal pain. An abdominal computed tomography scan indicated subcapsular hemorrhage (Figure 1). She had an emergency splenectomy. The spleen was $15 \times 12 \times 6.5$ cm in size and weighed 480 g (Figure 2) Macroscopic examination showed a ragged-edged capsular tear 3.8 cm in length near the hilum. Histology showed massive extra-medullary myelopoiesis in the red pulp without erytroblasts or megakaryocytes. The most common adverse effects attributed to G-CSF include bone pain, headache, musculoskeletal pain, and rash[2] but splenic rupture has also been described as a rare complication following administration of G-CSF in two allogeneic donors of PBSC.[3,4]

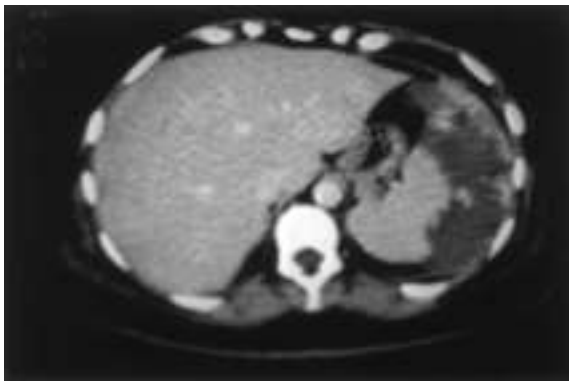

Figure 1. Abdominal CT scan revelaed an enlarged ruptured spleen.

The incidence of splenomegaly in normal individuals treated with G-CSF is currently unknown; this has only been described for individuals with neutropenia on chronic therapy.[5] It is interesting to note that the

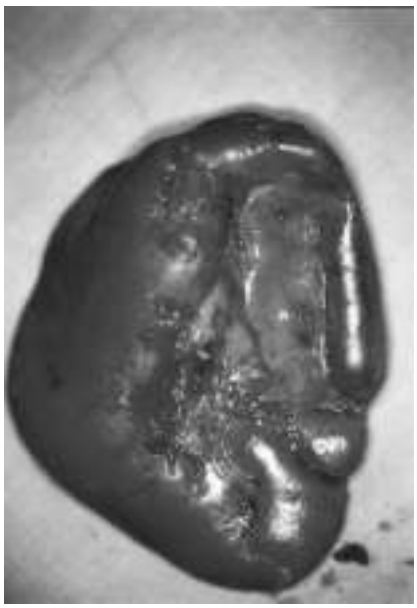

Figure 2. Ruptured spleen: note hemorrhage and fragmentation.

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