Paris staging system for primary gastrointestinal lymphomas

Currently, much effort is put into the development of specific therapeutic approaches that are tailored to specific lymphoma entities. As a consequence, more specific information needs to be collected to support the choice of therapy. In gastric marginal zone B cell lymphoma of MALT-type, the need for specialised documentation of tumour extent in the organ wall has been stressed by the high predictive value for failure of response after Helicobacter pylori eradication of infiltration beyond the mucosa, a predictive parameter irrespective of the presence of the t(11;18) translocation. With new techniques such as endosonography, this infiltration depth can be assessed with improving accuracy. However, the information cannot be translated into the current staging systems. The dissemination patterns of extranodal lymphomas are also essentially different from primary nodal lymphomas. As tumour stage is one of the most important guidelines in the choice of local therapy (surgery, radiotherapy) and chemotherapy, adequate documentation of tumour localisation in the organ related lymph nodes and beyond is essential.

The Ann Arbor staging system, developed for and routinely used in nodal non-Hodgkin’s lymphoma, is not optimal for documentation of the specific relevant features of primary extranodal lymphoma in the gastrointestinal tract. Several modifications and alternatives have been proposed. However, neither differentiation of stage I, (confined to the mucosa and submucosa) from stage II, (tumour extension beyond the submucosa according to Radaszkiewicz and colleagues) nor discrimination of stage II, (involvement of regional lymph nodes) from stage III (node involvement beyond the regional area, as assessed in the Musshoff modification) is sufficiently serving the demand for documenting all features of lymphoma. To meet these shortcomings, the Lugano classification was constructed by Rohatiner and colleagues introducing stage IIE for “serosa penetration” without lymph node involvement into the Ann Arbor system. This represents a change in meaning of stage II that originally indicated lymph node involvement. Therefore, the Lugano system is causing more confusion than benefit.

TNM staging for tumours of epithelial origin has also been proposed as an alternative in gastrointestinal lymphoma to describe localised disease. The “T” part of this system pertains to the anatomical structure of the organs and sufficiently fulfills the requirements for staging of local extent of the disease.

The European Gastro-Intestinal Lymphoma Study Group (EGILS) is a multidisciplinary group of investigators, including clinical investigators such as gastroenterologists, medical oncologists, radiotherapists, and pathologists, as well as basic researchers such as cellular and molecular biologists. Several groups from the UK, France, Germany, the Netherlands, Spain, and Austria now take part and have come together regularly since 1999 to discuss and study subjects in epidemiology and molecular and cell biology of gastrointestinal lymphoma. Clinical protocols and trials have been developed and performed as a collaborative effort. As a result of discussions on staging protocols and reporting systems over the past years, we would like to propose a modified TNM staging system, named after the first venue of the group in Paris. The staging system adequately records:

1. Depth of tumour infiltration;
2. Extent of nodal involvement; as well as
3. Specific lymphoma spreading (table 1). It is adjusted to the gastrointestinal origin of the lymphoma, considering histopathological characteristics of extranodal B and T cell lymphomas. The use of this system in future studies will permit accurate comparison of the reported cohorts and should allow rapid accumulation of good data for proper stratification of patients for risk assessment and treatment options.

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Table 1  Paris staging system for primary gastrointestinal lymphomas*

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0</td>
<td>No evidence of lymphoma</td>
</tr>
<tr>
<td>T1</td>
<td>Lymphoma confined to the mucosa/submucosa</td>
</tr>
<tr>
<td>T1m</td>
<td>Lymphoma confined to mucosa</td>
</tr>
<tr>
<td>T2</td>
<td>Lymphoma infiltrates muscularis propria or subserosa</td>
</tr>
<tr>
<td>T3</td>
<td>Lymphoma penetrates serosa [visceral peritoneum] without invasion of adjacent structures</td>
</tr>
<tr>
<td>T4</td>
<td>Lymphoma invades adjacent structures or organs</td>
</tr>
<tr>
<td>N0</td>
<td>No evidence of lymph node involvement</td>
</tr>
<tr>
<td>N1</td>
<td>Involvement of regional lymph nodes</td>
</tr>
<tr>
<td>N2</td>
<td>Involvement of intra-abdominal lymph nodes beyond the regional area</td>
</tr>
<tr>
<td>N3</td>
<td>Spread to extra-abdominal lymph nodes</td>
</tr>
<tr>
<td>M0</td>
<td>No evidence of bone marrow involvement</td>
</tr>
<tr>
<td>M1</td>
<td>Lymphomatous infiltration of bone marrow</td>
</tr>
<tr>
<td>M2</td>
<td>Lymphomatous infiltration of bone marrow</td>
</tr>
</tbody>
</table>

*Valid for lymphomas originating from the gastro-oesophageal junction to the anus (as defined by identical histopathological structure). In case of more than one visible lesion synchronously originating in the gastrointestinal tract, give the characteristics of the more advanced lesion.

†Anatomical designation of lymph nodes as “regional” according to site:
(a) stomach: perigastric nodes and those located along the ramifications of the coeliac artery (that is, left gastric artery, common hepatic artery, splenic artery) in accordance with compartments I and II of the Japanese Resection of regional lymph nodes (1995);
(b) duodenum: pancreaticoduodenal, pyloric, hepatic, and superior mesenteric nodes;
(c) jejunum/ileum: mesenteric nodes and, for the terminal ileum only, the ileocolic as well as the aortoenteric coeliac nodes;
(d) colonrectum: pericolic and perirectal nodes and those located along the ileocolic, right, middle, and left colic, inferior mesenteric, superior rectal, and internal iliac arteries.
A new cause for CA19.9 elevation: heavy tea consumption

Serum carbohydrate associated antigen (CA19.9) is a reliable tumour marker of biliopancreatic malignancies. A number of benign diseases are also known to be related to CA19.9 elevation. Here we report a case of markedly raised levels of CA19.9 associated with heavy tea consumption.

Case report
A 52-year-old woman was referred to our unit for epigastric pain and anorexia of two months’ duration. She also complained of nausea and a 2 kg weight loss. Her past medical history was unremarkable. She was a non-smoker and denied alcohol abuse or medication intake but remarked on overconsumption of warm black tea for several months (1–2 litres/day). Physical examination was normal.

Laboratory data demonstrated normal ranges for electrolytes, liver function tests, blood count, urea, creatinin, C reactive protein, amylase, and lipase. Fasting blood glucose, triglycerides, cholesterol, and thyroid hormone tests were normal. Autoantibodies were negative. Serum CA19.9 was 1432 UI/ml (normal <37), and CEA was 2 ng/ml (normal <5).

Upper endoscopy, colonoscopy, and barium study of the small bowel showed normal results. Abdominal ultrasonography and computed tomography scan found mild enlargement of the body of the pancreas without hepatobiliary abnormalities. Endoscopic ultrasonography showed no pancreatic malignancy or biliary abnormalities. The pancreas was homogenous and mildly enlarged in the body without pathological significance.

Sputometry, chest x-ray, bronchoscopy, and bronchoalveolar lavage fluid examination were normal. The patient was advised to stop tea consumption. Four weeks later she became symptom free and gained the 2 kg weight loss. Another serum CA19.9 assay showed a considerable drop in levels to <42 UI/ml. A rechallenge test was then attempted. The patient restarted tea consumption as previously. Four weeks later CA19.9 increased to 745 UI/ml followed by a fall to 25 UI/ml one month after withdrawal. Follow-up one year later revealed no clinical abnormalities. Abdominal and chest computed tomography scan were normal.

Discussion
CA 19.9 (sialyl Lewis-a) is a monosialo-oligoside with small increases in a number of benign diseases, with highest levels in pancreatic adenocarcinoma, hepatocellular, and cholangiocellular cancer, and also in gastric, colorectal, and occasionally other cancers.

Physiologically elevated concentrations are present in many secretions of healthy individuals, with the Lewis a positive phenotype in contrast with low serum levels of CA19.9 in Lewis a negative individuals (7–10%).

Among non-malignant causes, obstructive jaundice is frequently associated with increases in CA19.9. Relief of jaundice is often associated with a fall in CA19.9 in benign cases and mostly in patients with malignancy. Normal biliary epithelial cells secrete mucins carrying the epitope of CA 19.9. Unspecific elevation of CA 19.9 in serum reflects both inflammatory hypersecretion and leakage of biliary mucins into serum.

In addition, there is a strong correlation between serum CA19.9 concentration and standard parameters of cholestasis: alkaline phosphatase and bilirubin during acute liver failure, acute hepatitis, and chronic liver diseases of any aetiology.

Other benign causes of CA19.9 increases are shown in table 1. The common underlying mechanism for each is probably inflammatory hypersecretion of CA19.9 by normal epithelial cells.

The constituent flavonoids of tea beverage are known to be potent antioxidants. It appears that flavonoids impact on a wide range of molecular targets that influence cell growth and pathways of angiogenesis.

In this case, the usual causes of CA19.9 elevation were ruled out before a link with the tea beverage was suspected. After tea consumption withdrawal, a dramatic improvement occurred and the patient became symptom free, suggesting the diagnosis of tea intoxication. At the same time, serum CA19.9 levels dropped and a positive rechallenge test proved the relationship between tea overconsumption and raised levels of CA19.9.

To our knowledge, this is the first reported case of markedly raised levels of CA19.9 associated with heavy tea consumption. The mechanism of this relation remains unclear. In addition, the epithelial tissue target involved in CA19.9 secretion by tea overuse is unknown. Individual susceptibility to abnormal CA19.9 secretion triggered by tea overconsumption could not be excluded.

Table 1 Non-malignant causes of CA19.9 elevation (median value)

<table>
<thead>
<tr>
<th>Aetiology</th>
<th>Serum CA19.9 level</th>
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<tbody>
<tr>
<td>Obstructive jaundice</td>
<td></td>
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<tr>
<td>Acute liver failure and acute hepatitis</td>
<td></td>
</tr>
<tr>
<td>Chronic liver disease</td>
<td>+</td>
</tr>
<tr>
<td>Alcoholic liver disease</td>
<td>+</td>
</tr>
<tr>
<td>Non-alcoholic liver disease</td>
<td>+</td>
</tr>
<tr>
<td>Pancreatitis</td>
<td>-</td>
</tr>
<tr>
<td>Acute</td>
<td>+</td>
</tr>
<tr>
<td>Chronic</td>
<td>+</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>+</td>
</tr>
<tr>
<td>Intestinal pulmonary disease</td>
<td>+</td>
</tr>
<tr>
<td>Collagen vascular diseases</td>
<td>+</td>
</tr>
<tr>
<td><strong>Anecdotally reports:</strong></td>
<td></td>
</tr>
<tr>
<td>Hydronephrosis</td>
<td></td>
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<tr>
<td>Endometriosis</td>
<td></td>
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<tr>
<td>Splenic cyst</td>
<td></td>
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<tr>
<td>Bronchogenic cyst</td>
<td></td>
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<tr>
<td>Sigmoid diverticulitis</td>
<td></td>
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<tr>
<td>Hypothyroidism</td>
<td></td>
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</tbody>
</table>

References

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References

www.gutjnl.com
Non-alcoholic steatohepatitis and hepatic steatosis in patients with adult onset growth hormone deficiency

Adult onset growth hormone (GH) deficiency closely resembles syndrome X.\(^1\) Patients with syndrome X often suffer from obesity, dyslipidemia, insulin resistance, and hypertension, and hepatic steatosis and non-alcoholic steatohepatitis (NASH) have also been characterized as symptoms of syndrome X.\(^1\) However, the relationship of GH deficiency to hepatic steatosis and NASH remains unclear.

We looked for the presence of hepatic steatosis using computer tomography (CT) in a study of 18 patients with adult onset anterior lobe pituitary hormone deficiency, with or without GH deficiency. We also performed a liver biopsy in one patient with adult onset GH deficiency. None of the patients was positive for hepatitis B surface antigen, hepatitis C virus antibody, antinuclear antibody, or antimitochondrial antibody. The criterion used for diagnosing hepatic steatosis was a ratio for the liver/splenic CT value of less than 0.9. In 13 patients with GH deficiency, seven showed hepatic steatosis (53.8%) while in five patients without GH deficiency no hepatic steatosis was present (p=0.035). Body mass index (BMI kg/m\(^2\)), serum triglyceride level (TG mg/dl), and serum total cholesterol (T-ch mg/dl) were similar in patients with or without GH deficiency (table 1). The significance of the per hepatic steatosis was evaluated by \(\chi^2\) test. BMI, TG, and T-ch were analysed using an unpaired Student’s t-test.

The male patient on whom we performed a liver biopsy was diagnosed with GH deficiency at 58 years old. He showed hepatic steatosis, measured by CT, at 64 years. Serum aspartate aminotransferase level fluctuated from 20 to 80 U/l. The patient did not have a history of alcohol abuse but was slightly obese (BMI 30 kg/m\(^2\)). Liver biopsy was performed when the patient was 72 years old, and this showed the presence of NASH (fig 1).

We have demonstrated that hepatic steatosis is more frequently observed in patients with GH deficiency than in those without GH deficiency. Furthermore, by liver biopsy, we have shown that a patient with GH deficiency also had NASH. These results indicate that adult onset GH deficiency is a possible risk factor for hepatic steatosis and NASH.

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<table>
<thead>
<tr>
<th>Table 1</th>
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<tbody>
<tr>
<td>Without GH deficiency</td>
</tr>
<tr>
<td>Hepatic steatosis (+/-)</td>
</tr>
<tr>
<td>BMI (kg/m(^2))</td>
</tr>
<tr>
<td>TG (mg/dl)</td>
</tr>
<tr>
<td>T-ch (mg/dl)</td>
</tr>
</tbody>
</table>

Values are mean (SD).

BMI, body mass index; TG, serum triglyceride level; T-ch, serum total cholesterol.

Expression of thioupinure methyltransferase in South Asians

Azaithioprine and its metabolite 6-mercaptourine (6-MP) are widely used in the treatment of Crohn’s disease, ulcerative colitis, autoimmune hepatitis, and a range of other inflammatory and autoimmune diseases, as well as for prevention of transplant rejection. Thiopurine methyltransferase (TPMT) converts 6-MP to 6-methylMP, easing, as well as for prevention of transplant rejection. Thiopurine methyltransferase (TPMT) converts 6-MP to 6-methylMP.
suggests that the frequency of individuals with the mutant TPMT allele, TPMT*3A, is lower in Southwest Asians than in Caucasian; allele causes reduced enzyme activity in vitro. However, there are no data on the phenotypic expression of TPMT in South Asian populations.

We have compared expression of TPMT in South Asian and Caucasian patients attending gastroenterology, renal, rheumatology, and dermatology clinics who were being considered for treatment with thiopurines. TPMT activity was assayed by tandem mass spectrometry for 6-mercaptopyrimidine (MP) assays kindly provided by Purine Research Laboratory, Guy’s Hospital, London SE1 9RT, UK. Homozygous deficiency of TPMT was defined as a level <10, heterozygous as 10–25, and normal as >25 pmol/h/mg haemoglobin.

Of 83 Caucasian patients, one (1.3%) was homozygously deficient, 10 (12%) were heterozygous, and 72 (86.7%) had normal expression of TPMT. The corresponding values in 77 South Asian patients were 0.7 (9%), and 70 (91%), respectively.

The prevalence of deficiency of expression of TPMT in South Asian patients resembles that in Caucasians. Use and monitoring of azathioprine and 6-MP should therefore follow similar principles in both ethnic groups.

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References

Fatigue is associated with high circulating leptin levels in chronic hepatitis C

We read with great interest the recent paper from Piche and colleagues (Gut 2002; 51:434–9) relating serum levels to fatigue in chronic hepatitis C patients. On the surface, their observation that serum leptin levels correlate with the fatigue impact scale are very intriguing. However, leptin shows a gender based difference and women have circulating plasma leptin concentrations that are at least twice as high as men, even when matched for body fat mass. This sex needs to be considered when investigating any association with leptin levels, and multivariate analysis is necessary to assess the bias caused by this confounding variable. Indeed, in the study by Piche et al the fatigue impact scale was found to be significantly higher in females. Without a multivariate analysis the authors cannot affirm that serum leptin levels are implicated in fatigue development in patients with chronic hepatitis C.

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Mutant K-ras2 in serum

Ryan and colleagues’ careful and well conducted study (Gut 2003; 52:101–8) raises once again the interesting issue of whether molecular analysis and knowledge of mutations of the Kirsten ras gene in particular, have a role in the management of patients with colorectal cancer.

The two RASCAL (Kirsten Ras in Colorectal Cancer Collaborative group) studies1,2 which eventually enrolled data from 4266 patients from 42 centres in 21 countries showed that although the frequency of Kirsten ras mutations at codons 12 and 13 may vary a little between populations, overall they are only present in just over one third of patients. This is significantly less frequent than quoted by Ryan et al. In addition, the RASCAL study also showed that Kirsten ras mutations are not associated with sex, age, tumour size, or Duke’s stage.

Much more importantly, however, they also showed that of the 12 different possible specific point mutations at codons 12 or 13, only a guanine to thymidine mutation, which are found in less than 10% of all patients, is an independent variable for relapse and death. Indeed, the most common mutation, guanine to adenine, exerted an effect on survival barely different from wild-type ras. Others have shown there is a reasonable biological basis for these findings, but the position of the primary tumour. While a number of studies have suggested that occasional metastases may carry a different mutation to the primary, this is very uncommon. If the mutation is not the same as the primary tumour, this raises many issues, not least that despite the very careful use of controls, nested polymerase chain reaction techniques may be too sensitive for clinical practice.

For an individual with colorectal cancer, a multitude of factors may shape the clinical course. To improve our knowledge, we must seek to study the most subtle variation in molecular profiles possible, as small differences may be very important. While rigorous small prognostic clinical studies may be intriguing, they may have significant limitations. Some of us have argued previously that there is only one way forward.5 All bodies funding prospective therapeutic studies in colorectal cancer should insist that a panel of molecular markers are measured and recorded in all patients using a standardised technique, even if they are not included as an end point, and make these results readily available for subsequent analysis. Studies such as these, which are performed prospectively, can carry the least risk of methodological flaws.

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BOOK REVIEW

Radiological Imaging of the Small Intestine


This book is a sophisticated and highly informative guide to radiological imaging of the small intestine. The authors have surveyed the entire field, including the most recent advances, and have presented their conclusions in a clear and concise manner. The book is well-organized and easy to read, making it an excellent resource for both radiologists and gastroenterologists.

The book begins with an overview of the normal anatomy and physiology of the small intestine, followed by a detailed discussion of the various imaging techniques that can be used to evaluate this organ. The authors then go on to discuss the various disorders that can affect the small intestine, providing a comprehensive overview of the diagnostic and therapeutic options available.

Overall, this book is an excellent resource for anyone involved in the field of radiology or gastroenterology. It is highly recommended for anyone who wishes to stay up to date with the latest developments in the field.

A H Freeman

NOTICES

New In Vivo Imaging Modalities for Molecular Biology, Cell Biology and Physiology

This symposium will be held on 31 May–4 June 2003 in Roscoff, France. Further information can be obtained by contacting the conference organizers.

Prague Hepatology Meeting

To be held on 5–7 June 2003 in Prague, Czech Republic. Leading speakers from Europe and the USA will present new ideas and suggestions on pathophysiology, diagnostics, and therapy of liver diseases in ten programmes.

Further details: Ms Veronika Revicka. Tel: +420 241 445 759; fax: +420 241 445 806; email: veronika@ccongressprague.cz

8th International Liver Symposium

This symposium will be held on 13 June 2003 in Manchester, UK. Leading speakers from the USA and Europe will present state of the art reviews on recent advances in hepatology. Further details: Professor TW Wannas, Department of Gastroenterology, Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, UK. Tel: +44 (0)161 276 4316; fax: +44 (0)161 276 8779; email: judith.harrop@cmh.nhs.uk

Gastroenterology and Endotherapy: XXIst European Workshop

This will be held on 16–18 June 2003 in Brussel, Belgium. Further details: Nancy Beauprez, Administrative Secretariat of the Workshop, Gastroenterology Department, Erasme Hospital, Route de Lennik 808, B-1070 Brussel, Belgium. Tel: +32 (0)2 555 49 00; fax: +32 (0)2 555 49 01; email: beauprez@ulb.ac.be

The Association of Coloproctology of Great Britain & Ireland

This annual meeting will be held on 7–10 July 2003 in Edingburgh, UK. Further details: Conference Secretariat, The ACGBI at the Royal College of Surgeons of England, 35–43 Lincoln’s Inn Fields, London WC2A 3PE. Tel: +44 (0)20 7973 0307; fax: +44 (0)20 7430 9235; email: acgb@acgb.org.uk; website: www.acgb.org.uk

European Helicobacter Study Group (EHSG)

This meeting, on Helicobacter infections and gastroduodenal pathology, will be held on 3–6 September 2003 in Stockholm, Sweden. Further details: Professor Tor-Kjell Wadstrom, President- EHSG, Lund University, Department of Infectious Diseases & Medical Microbiology, Division of Bacteriology, Solvagatan 23, SE-223 62 Lund, Sweden. Tel: +46 46 173 241; fax: +46 46 152 564; email: Torkel.Wadstrom@mmb.lu.se; website: www.helicobacter.org