Efficacy and strategy of pneumatic dilatation in achalasia

We read with interest the article by Eckardt et al regarding the long term results of pneumatic dilatation in achalasia (Gut 2004;53:629–33). Fifty four patients were followed up for a median of 14 years after a single pneumatic dilatation using the Browne-McHardy dilator. Five and 10 year remission rates were 40% and 36%, respectively, and repeated dilatations only mildly improved the clinical response. Most of the relapses occurred within one year of dilatation. Patients with post-dilatation lower oesophageal sphincter pressures of <10 mm Hg had a significantly better outcome. The authors suggest that failure to respond to the first dilatation should lead to consideration of alternative therapy.

We disagree with this conclusion and we would like to bring to your attention a recent prospective study on the long term effects of pneumatic dilatation in 11 patients with achalasia.1 A different approach was chosen—that is, treatment consisted of one or more pneumatic dilatations under conscious sedation in order to achieve stable clinical remission, defined as persisting one year after dilatation. To this end, close follow up was performed in the first year after dilatation (scheduled assessments at three and 12 months). Thereafter, clinical and manometric assessments were performed yearly for six years. The clinical score was according to Eckardt et al. Five patients needed one (30 mm diameter Rigiflex dilator) and six needed two (30 and 35 mm diameter) dilatations. No complications occurred. All patients remained in clinical remission and their lower oesophageal sphincter pressure decreased to <10 mm Hg and remained unchanged over time.

There are similarities in the results of the two studies. The long term outcome of our 11 patients was comparable with that of the eight patients of Eckardt et al with a lower oesophageal sphincter pressure of <10 mm Hg who had a remission rate of 78% at six years; and (2) the observation that the six patients in our series who needed a second dilatation all relapsed within one year of the first dilatation agrees with the data by Eckardt et al, showing that most relapses occur within 12 months. However, our dilatations were more successful and, importantly, a second dilatation led to a sustained remission in all patients. We do not know the reason for this difference but believe it may be at least partly related to our use of the non-compliant Rigiflex dilator, which is currently considered the best choice, although there are no adequately powered comparisons with the Browne-McHardy dilator in the literature.2 Similarly to our result, a recent paper has shown very good efficacy of a second dilatation with the Rigiflex dilator in patients who had relapsed.3 Another possible reason is the use of conscious sedation during the procedure which allowed us to complete all dilatations; Eckardt et al, who used topical anaesthesia only, had to prematurely terminate 17% of the procedures.

In conclusion, our published experience and our current clinical practice, involving treatment and follow up of 10–15 new achalasia patients each year, suggest that performance of one or two dilatations until stable clinical results is a valuable strategy, and that pneumatic dilatation under conscious sedation with the Rigiflex dilator is an effective long term treatment in most patients with achalasia.

R Penagini, P Cantù
Cattedra di Gastroenterologia, Dipartimento di Scienze Mediche, University of Milan, IRCCS Ospedale Maggiore, Milan, Italy

Correspondence to: Professor R Penagini, Cattedra di Gastroenterologia, Dipartimento di Scienze Mediche, University of Milan, IRCCS Ospedale Maggiore, Milan, Italy; roberto.penagini@unimi.it

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Authors’ reply

Penagini and Cantù should be congratulated for the remarkable results they were able to obtain in 11 patients with achalasia treated by pneumatic dilatation. To my knowledge, not a single study has so far produced similar results. A review of prospective studies in patients undergoing pneumatic dilatation with the Rigiflex dilator4 indicated that approximately 80% will have a good or excellent short term response. However, if such patients are observed for prolonged periods, the results obtained do not differ significantly from those observed following treatment with the older balloons. In a recent study, in which 56 patients were treated with the Rigiflex dilator and observed for more than 10 years, the long term success rate was 55%.5 Thus it is my impression that differences in treatment results are not so much related to differences in technique and operator experience but rather to the number of patients investigated, duration of follow up, and finally the quality of the study design. It is hoped that carefully designed randomised studies, which are now in progress, will tell us whether we should continue to offer pneumatic dilatation to the great majority of patients with achalasia or whether we should advise them to undergo surgery instead.

References


Conflict of interest: None declared.

Correspondence to: Dr V F Eckardt, Deutsche Klinik für Diagnostik, Aukammallee 33 Wiesbaden 65191, Germany; eckardt.gastro@dkl-wiesbaden.de

Conflict of interest: None declared.

References


Probiotics in IBD: mucosal and systemic routes of administration may promote similar effects

We read with considerable interest the paper by Sheil et al (Gut 2004;53:694–700) who reported the successful application of the subcutaneous route for probiotic attenuation of colitis.

We agree with the corresponding commentary by Ghosh et al (Gut 2004;53:620–2) regarding the need to study mechanisms underlying probiotic interactions. Recently, we further standardised a method to compare the anti-inflammatory potential of orally administered lactic acid bacteria (LAB) in a murine model of acute 2,4,6, trinitrobenzene sulphonic acid (TNBS) induced colitis.1 This model allowed us to discriminate “protective” strains, showing between 30% and 70% reduction of inflammatory score, from strains which did not significantly attenuate experimental colitis. We could select highly performing strains of Lactobacillus salivarius and Lactobacillus rhamnosus that consistently lowered colitis. In comparison, using Lactobacillus acidophilus, Lactococcus lactis, and Streptococcus gordonii never showed any improvement. For all five strains, we investigated the protective effect of a single intraperitoneal injection of 5x106 live microorganisms, 24 hours prior to induction of colitis. Surprisingly, protection by the LAB strains via this systemic route closely matched the efficiency of the oral route (fig 1).

When evaluating both routes simultaneously, the anti-inflammatory effect was of comparable magnitude. Moreover, the prophylactic impact of the intraperitoneal Lactobacillus salivarius strain was established up to two hours before TNBS administration. It is noteworthy that two delayed injections could lead to protection but caused marked weight loss (25% (p<0.05) v 15% and 11%, respectively, for control and oral route groups) with alleviated fever.

Our findings clearly confirm those of Sheil et al (Gut 2004;53:694–700) showing strain specific in vivo probiotic efficacy; using the target tissue, suggesting a relationship between the type of LAB (or LAB components) and peritoneal immunocompetent cells. Pereyra and colleagues2 reported transient dose dependant induction of the interferon in serum of intraperitoneal injected Lactobacillus bulgaricus while Streptococcus thermophilus did not. Recent

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Mutations in anionic trypsinogen gene are not associated with tropical calcific pancreatitis

Pancreatitis is considered to be an autodigestive disease due to premature activation of trypsinogen inside the pancreas. Its genetic basis has recently been established with the identification of causal mutations in cationic trypsinogen gene (PRSS1) in patients with hereditary and non-hereditary pancreatitis. Mutations in other genes such as SPINK1 (encoding pancreatic secretory trypsin inhibitor) and cystic fibrosis transmembrane conductance regulator (CFTR) genes have also been associated with the disease. Tropical calcific pancreatitis is a type of idiopathic pancreatitis, reported particularly in the tropics. Recently, we and others demonstrated absence of PRSS1 mutations but significant prevalence of the N34S mutation in the SPINK1 gene in these patients. However, our study raised two important questions: firstly, the exact role of SPINK1 mutations in disease causation as cationic trypsinogen is normal with an intact autosomal-dominant inheritance; and secondly, the cause of the disease in the remaining patients negative for both PRSS1 and SPINK1 mutations.

Of the nine members of the human trypsinogen gene family, only PRSS1, PRSS2, and PRSS3 are functional genes coding for cationic, anionic, and meso-trypsins. Three forms of trypsins in pancreatic juice. We investigated whether mutations in the anionic trypsinogen gene may contribute to the pathogenesis of tropical calcific pancreatitis. Nine mutations reported to date in the PRSS1 gene, 17 are clustered in exons 2 and 3. The remaining three are in the promoter region but reported in isolated patients. Hence we initially screened exons 2 and 3 of the anionic trypsinogen gene in 68 well characterised Indian patients with tropical calcific pancreatitis. Subsequently, we also sequenced the promoter, complete coding region, and the flanking region in an attempt to look for any novel mutation.

Owing to the extremely high sequence homology between PRSS1 and PRSS2, a nested polymerase chain reaction (PCR) was used to ensure specificity. The primers were selected from the published study of Chen and colleagues and all of the exons of PRSS2 were PCR amplified, purified, and sequenced on both alleles using initial sequencing primers and the Big Dye terminator cycle sequencing approach. However, we did not find any of the reported or any novel mutations in the coding region or in the splice site junctions, except a synonymous polymorphism A90A (GCA>GGA) in exon 3 of the anionic trypsinogen gene. This variation was observed in both the heterozygous...
and homozygous states with a mutant allele frequency of 0.58 (9 AA, 20 GG, and 39 AG) and was comparable with 0.61 in 50 controls (7 AA, 18 GG and 25 AG) analysed. Our results thus exclude any association of mutations in the anionic trypsinogen gene in tropical calcific pancreatitis and suggest a role for other genetic or non-genetic factors in the pathogenesis of the disease. Screening of genes such as CPT2 may explain the disease in the remaining patients. It also affirms the importance of the N34S mutation in SPINK1 as the major genetic factor for this type of pancreatitis.

M M Idris*, S Bhaskar*
Centre for Cellular and Molecular Biology, Hyderabad, India

D N Reddy
Asian Institute of Gastroenterology, Hyderabad, India

K R Mani
Centre for Cellular and Molecular Biology, Hyderabad, India

G V Rao
Asian Institute of Gastroenterology, Hyderabad, India

L Singh, G R Chandak
Centre for Cellular and Molecular Biology, Hyderabad, India

Correspondence to: Dr G R Chandak, Centre for Cellular and Molecular Biology, Uppal Rd, Hyderabad, AP 500 007, India; chandaglrg@cimb.res.in
do: 10.1136/gut.2004.055335

*M M Idris and S Bhaskar contributed equally to this work.

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Elevated plasma protein C levels correlate with the presence of fatty liver (NASH and NAFLD)
The clinical implications of non-alcoholic fatty liver disease (NAFLD) are derived mostly from its common occurrence in the general population and the potential of the condition to progress to fibrosis and cirrhosis. Markers that help in making an early diagnosis and treatment warranted. Protein C is a vitamin K–dependent glycoprotein that functions as a circulating anticoagulant through proteolytic cleavage and inactivation of the coagulation factors Va and VIII. Whether or not protein C levels increase in patients with NAFLDs has not been assessed.

We measured protein C levels in 44 patients (28 men and 16 women; mean ages 45 (11) and 49 (12) years, respectively); 15 patients with fatty liver (FL), 15 with non-alcoholic steatohepatitis (NASH), and 14 with chronic viral hepatitis B+V (CH). All were diagnosed by histology and liver technetium scan or ultrasound. Ten healthy subjects were used as controls. Obesity, hyperlipidaemia, and diabetes were present in 60%, 75%, and 23% of cases, respectively; 64% of patients had elevated liver enzyme tests (alanine aminotransferase 45 (21) IU/l in FL and 43 (18) IU/l in NASH). Mean protein C levels were significantly increased in patients with NAFLDs (n = 30) compared with those with chronic viral hepatitis (140 (36) % 101 (24)% p = 0.0009 and healthy individuals (140 (36) v 120 (12) p = 0.04). No significant difference in protein C levels was noted between simple fatty liver and NASH (149 (34) % 130 (37) % p = 0.97). A significant correlation was found between protein C and extent of fatty infiltration (r = 0.63; p < 0.001) (fig 1), insulin resistance index (r = 0.3; p < 0.01), and triglyceride levels (r = 0.45, p < 0.001). Protein C could discriminate correctly between NAFLDs and chronic viral hepatitis in 82% of cases. No significant association was found between protein C and aminotransferase levels.

In conclusion, protein C was elevated in patients with NAFLD. The underlying mechanism remains unknown. Ageewal et al suggested an increase in hepatic synthesis of protein C due to increased hepatic insulin resistance. Increased levels have been reported in patients with diabetes, hyperglycaemia, and nephrotic syndrome, with the use of anabolic steroids, alcohol, and with increasing age. Whether or not protein C levels increase in patients with NAFLD may obviate the need for liver biopsy.

Chronic idiopathic intestinal pseudo obstruction and inflammatory bowel disease
Chronic idiopathic intestinal pseudoobstruction (CIPI) is a severe condition presenting with abdominal pain and dysmotility. Inflammatory or degenerative changes of the autonomic nervous system or of the muscles of the bowel have been observed in CIPI. As patients with inflammatory bowel disease (IBD) may show clinical and histological signs of autonomic neuropathy and dysmotility, the aim of this study was to examine whether there is an association between CIPI and IBD.

Six patients at our hospital presenting with signs and symptoms of intestinal dysmotility were diagnosed with IBD based on presented features, antroduodenaljiumal manometry, and full thickness biopsies (table 1). Patient No 1 had an acute erosive colitis some years previously with bloody diarrhoea and an enhanced sedimentation rate, which was treated with steroids, and patient No 2 had relapsing proctitis treated with 5-amino-saliclyc acid (5-ASA). Patient No 3 was
totally and patient No 4 partially colectomised because of slow transit constipation. Patient No 6 was proctocolectomised due to dysmotility developed after proctocolectomy. Ganglionitis in patient No 3 could have been caused by Crohn’s disease.

Histopathological examination of the full thickness biopsies from patient Nos 1 and 2 showed visceral degenerative neuropathy, combined with focal transmural lymphoid hyperplasia consistent with Crohn’s disease throughout the ileum (fig 1B), with signs of neurone degeneration, and 30% and 80% reduction of ICCs in the perimyenteric ICC-plexus and deep muscular plexus of the circular muscle layer, respectively. Patient No 4 had a normal biopsy, and patient No 5 was not biopsied. Examination of mucosal biopsies from patient No 1 revealed focal active inflammation in the duodenum and caecum, and chronic inflammation in the rectum; patient No 5 had multifocal mild antral cryptitis, and both patients were diagnosed with suspected Crohn’’s disease. Colon biopsies from patient No 6 revealed epithelioid cell granulomas and multinucleated giant cells, as well as multifocal transmural lymphoid hyperplasia consistent with Crohn’s disease.

In three patients (Nos 1, 3, and 4), dysmotility preceded the mucosal changes. In patient Nos 2 and 5, these two entities occurred simultaneously, while in patient No 6, dysmotility developed after proctocolectomy. Ganglionitis in patient No 3 could have been caused by Crohn’s disease before other symptoms of the disease developed. Treatment with 5-ASA has reduced her abdominal pain. The normal histology of the sigmoidum in patient No 4 does not exclude the possibility of ganglionitis in other parts of the bowel due to the known patchy involvement of the gut in Crohn’’s disease. The present observations indicate that apart from inflammation, even purely degenerative neuronal and ICCs changes seen in CIP can occur in patients who also have IBD/IBD-like condition. At present, it is not known whether the observed abnormalities are part of IBD or independent of each other. This small patient sample prevents us from drawing any definite conclusion regarding this question. Further observations are needed to establish whether or not this connection is causal.

**Table 1** Summary of the findings in our patients

<table>
<thead>
<tr>
<th>Patient No: age (y)/sex</th>
<th>Debut age/CIIP diag age (y)</th>
<th>Main symptoms</th>
<th>Clinical diagnosis</th>
<th>Endoscopic pathology</th>
<th>Histopathology</th>
<th>Antroduodenal manometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 23/F</td>
<td>16/22</td>
<td>Pain, bloody diarrhoea</td>
<td>Crohn’s disease, CIIP</td>
<td>Small and large bowel</td>
<td>Degenerative neuropathy</td>
<td>Suspected Crohn’s disease</td>
</tr>
<tr>
<td>2 26/F</td>
<td>15/25</td>
<td>Pain, vomiting</td>
<td>Prolitis, CIIP</td>
<td>Rectum</td>
<td>Degenerative neuropathy</td>
<td>Abnormal</td>
</tr>
<tr>
<td>3 35/F</td>
<td>Teenage/29</td>
<td>Constipation, dyspepsia</td>
<td>Crohn’s disease, CIIP</td>
<td>Small and large bowel</td>
<td>Ganglionitis</td>
<td>Normal</td>
</tr>
<tr>
<td>4 44/F</td>
<td>33/39</td>
<td>Constipation, pain</td>
<td>Suspected Crohn’s disease, CIIP</td>
<td>Small bowel</td>
<td>Abnormal</td>
<td></td>
</tr>
<tr>
<td>5 55/M</td>
<td>39/41</td>
<td>GORD, later pain and diarrhoea</td>
<td>Suspected Crohn’s disease, CIIP</td>
<td>Normal</td>
<td>Suspected Crohn’s disease</td>
<td></td>
</tr>
<tr>
<td>6 67/M</td>
<td>61/64</td>
<td>Pain, weight loss</td>
<td>Crohn’s disease, CIIP</td>
<td>Large bowel</td>
<td>Ganglionitis, Crohn’s disease</td>
<td></td>
</tr>
</tbody>
</table>

CIIP, Chronic idiopathic intestinal pseudo-obstruction; GORD, gastro-oesophageal reflux disease.

**Figure 1** Patient No 3. (A) Capsule endoscopy showed aphthous ulcers typical of Crohn’s disease throughout the distal jejunum and ileum (fig 1A). Ileocolonoscopy showed the same picture in the ileum and ileorectal anastomosis.

Department of Medicine, Malmö University Hospital, University of Lund, Sweden

B Ohlsson

Department of Diagnostic Radiology, Malmö University Hospital, University of Lund, Sweden

B Veress

Department of Pathology, Malmö University Hospital, University of Lund, Sweden

E Toth

Department of Medicine, Malmö University Hospital, University of Lund, Sweden

Correspondence to: Dr B Ohlsson, Department of Medicine, Entrance 35, 205 02 Malmö, Sweden; bodil.ohlsson@kir.lu.se
doi: 10.1136/gut.2004.058826

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6 Manousos ON, Salem SN. Abnormal motility of the small intestine in ulcerative colitis. Gastroenterology 1965;104:249–57


F-T Fork

Department of Diagnostic Radiology, Malmö University Hospital, University of Lund, Sweden

B Veress

Department of Pathology, Malmö University Hospital, University of Lund, Sweden

E Toth

Department of Medicine, Malmö University Hospital, University of Lund, Sweden

Correspondence to: Dr B Ohlsson, Department of Medicine, Entrance 35, 205 02 Malmö, Sweden; bodil.ohlsson@kir.lu.se
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Inflammatory bowel disease 
stimulates formation of carzinogenic N-nitroso compounds

In patients with inflammatory bowel disease (IBD), increased incidence of colon cancer is observed.1 Although severe inflammatory conditions per se represent a risk factor for neoplasia, we would like to draw attention to the possible role of increased activity of inducible nitric oxide synthase (iNOS), as found in IBD patients,2 in the endogenous formation of carcinogenic N-nitroso compounds (NOC). In healthy individuals, relatively small amounts of NOC are formed by the interaction between NOC precursors (NOCP), present in dietary items such as meat and fish, and nitrosating agents derived from dietary nitrate. It has been proposed that endogenous formation of NOC may explain the link between meat consumption and colon cancer risk found in epidemiological studies.3 We hypothesised that as a result of chronic inflammatory conditions in the large intestine, increased colonic iNOS activity may produce an excess of NO, nitrogen oxides, and nitrite, which in turn react with NOCP present in the colon to produce relatively high levels of NOCs. Increased formation of NOC in IBD patients may thus contribute to the relatively high incidence of colorectal cancer associated with this disease.

A recent population based case control study showed that in cases with a history of IBD, increased exposure to drinking water nitrate was associated with an increased risk of colon cancer whereas no such association was found in the overall population.4 This clearly indicates that the risk of colon cancer in IBD patients is not only determined by the disease itself but dietary factors known to influence the endogenous formation of NOC are also associated with an increased risk in these patients. Although both the increased formation of NOC found in mice with chemically induced colitis5 and increased levels of NO and nitrite found in the colonic lumen of patients with ulcerative colitis6 support this hypothesis, NOCP levels have never been investigated in IBD patients.

Therefore, we collected faecal samples from 17 patients diagnosed with ulcerative colitis and 17 healthy controls, and determined levels of N-nitrosodimethylamine (NDMA), a predominant carcinogenic NOC, using gas chromatography-mass spectrometry, as previously described.7 The study was approved by the medical ethics committee of the Maasland Hospital, Sittard, the Netherlands, and all patients gave their consent. In 41% of patients, we found levels of NDMA above the detection limit of 1 ng/g faeces, compared with 35% of controls. Comparison of concentrations in NDMA positive samples showed that the average concentration in patients was significantly higher than that in the control group (table 1). When IBD patients were subdivided into hospitalised and non-hospitalised cases, the difference between the non-hospitalised group and controls was even more pronounced, whereas NDMA concentrations in hospitalised patients and controls were similar. All hospitalised patients received only liquid nutrition (Nutrison; Nutricia, UK) without additional intake of NOCP rich dietary foods, these results confirm that the combination of high dietary NOCP intake and inflammation may present a risk factor.

Most research on endogenous NOC exposure has focused predominantly on the intragastric formation of these compounds in relation to the gastric cancer risk. However, we now report that faecal NDMA levels in IBD patients are considerably higher than those we reported previously in gastric juice (0.25 (0.3) ng/g),8 which indicates that NOC exposure may be even more relevant in colon carcinogenesis.

Based on these results, we conclude that the colon of IBD patients is exposed to relatively high concentrations of this carcinogenic compound, probably as a direct consequence of continuous NO production by the inflammatory process. As this exposure may strongly contribute to the increased colon cancer risk associated with IBD, dietary recommendations for IBD patients, avoiding high NOCP intake, seem warranted.

T M C M de Kok
Department of Health Risk Analysis and Toxicology, University Maastricht, Maastricht, the Netherlands
L G J B Engels
Department of Gastroenterology, Maasland Hospital, Sittard, the Netherlands
E J Moonen, J C S Kleinjans
Department of Health Risk Analysis and Toxicology, University Maastricht, Maastricht, the Netherlands
Correspondence to: Dr T M C M de Kok, Department of Health Risk Analysis and Toxicology, University Maastricht, PO Box 616, 6200 MD, Maastricht, the Netherlands; t.dekok@grat.unimaas.nl
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Conflict of interest: None declared.

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Hepatocellular carcinoma occurring after successful treatment of childhood cancer with high dose chemotherapy and radiation

Hepatocellular carcinoma (HCC) is one of the world’s most common malignancies and accounts for more than 90% of all primary liver cancers. A number of different risk factors have been identified for the development of HCC. Hepatitis B carrier state, environmental toxins, chronic hepatitis C virus infection, hereditary haemochromatosis, and liver cirrhosis of almost any cause are well known risk factors for HCC. In addition, environmental toxins such as aflatoxins and contaminated drinking water may contribute to the pathogenesis of HCC, especially in Asia and underdeveloped countries. Finally, a number of HCC cases have occurred after the use of thorotrast for diagnostic procedures, and survivors of the atomic bomb of Hiroshima were also at higher risk for HCC development, indicating that radiation might also induce the development of HCC.

Herein we describe a rare case of HCC occurring in a patient 17 years after successful treatment of peripheral neuroectodermal tumour (PNET). A 32-year-old female presented with pain in the right upper quadrant of her abdomen. Seventeen years prior to presentation in our hospital this patient was treated for a PNET with a combination of high dose chemotherapy (vincristine, adriablastin, ifosfamide, and actinomycin D) and surgical removal of the tumour. There were no signs of recurrence of the tumour observed on her last checkup 12 months earlier. Physical examination of the patient in our clinic showed typical signs of late radiation damage (erythema of the skin and an underdeveloped hair growth) (fig. 1). A firm 3–5 cm mass was palpable at the lower edge of the liver. Laboratory tests showed elevated alanine aminotransferase (41881 U/L). Magnetic resonance imaging revealed multiple intrahepatic masses up to 6.5 cm in diameter. A biopsy from the hepatic lobe revealed multiple intrahepatic masses. A diagnosis of HCC was confirmed by computer tomography and positron emission tomography, and negative anaplastic large cell lymphoma with rectal fistulas. Biopsies showed a polymorphous tumour infiltrate. Tumour cells were positive for CD30 and negative for T and B cell phenotype. Clinical stage was IAE.

To the best of our knowledge, secondary HCC following high dose chemotherapy has never been described and therefore we searched the German Childhood Cancer registry, which started to register all cases of malignancies in children (<15 years) in 1980. This database also collects data from secondary malignancies following chemotherapy. In this database we were able to detect a total of four more cases of secondary HCC, which are summarised in table 1. Interestingly one patient was hepatitis B surface antigen positive.

Radiotherapy has been shown to be associated with an increased risk of solid tumours 10–15 years after treatment and later. There is one report in the literature of a radiation induced hepatoma in a patient with a non-malignant haemangiomata, which occurred 20 years after radiation of the liver with 28.5 Gy. To date, the molecular mechanism of hepatocarcinogenesis is not completely understood.

Biologic sinus and radiation therapy might also induce the development of HCC.

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T F Greten, M P Manns
Department of Gastroenterology, Hepatology, and Endocrinology, Medizinische Hochschule Hannover, Germany

I Reinisch, P Kaatsch
German Childhood Cancer Registry, Institute for Medical Biometrics, Epidemiology and Informatics, University of Mainz, Germany

Correspondence to: Dr T F Greten, Department of Gastroenterology, Hepatology, and Endocrinology, Medizinische Hochschule Hannover, Carl-Neuberg Str 1, 30625 Hannover, Germany; greten.tim@mh-hannover.de

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References


Table 1 Details of five cases of secondary hepatocellular carcinoma

<table>
<thead>
<tr>
<th>First malignancy</th>
<th>Age (y)</th>
<th>Treatment</th>
<th>Age when HCC was diagnosed (y)</th>
<th>Time from first to second malignancy (y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL hado</td>
<td>4</td>
<td>CTx*</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Osteosarcoma</td>
<td>4</td>
<td>CTx, RTx</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>ALL hado</td>
<td>4</td>
<td>CTx, RTx</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>PNET</td>
<td>15</td>
<td>CTx, RTx</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>Teratoma</td>
<td>2</td>
<td>na</td>
<td>19</td>
<td>16</td>
</tr>
</tbody>
</table>

ALL, acute lymphocytic leukaemia; PNET, peripheral neuroectodermal tumour; CTx, chemotherapy; RTx, radiation therapy.

This patient was hepatitis B surface antigen positive.


Biologics in inflammatory disease: infliximab associated risk of lymphoma development

In their excellent overview of currently available biologic compounds that are in use or under investigation for Crohn’s disease (CD), Sandborn and Faucon (Gut 2004;53:1366–73) confirm the unique standing of infliximab. They also note the ongoing discussion concerning the increased occurrence of lymphoproliferative disorders in patients who received infliximab.

Recently, we followed a 61 year old patient with a 31 year history of relapsing CD. Initial treatment was with steroids but after 10 years with infliximab. This patient relapsed with postobstructive pneumonia. Transrectal biopsies showed a polymorphous tumour infiltrate. Tumour cells were positive for CD30 and negative for T and B cell markers as well as the anaplastic large cell lymphoma kinase (ALK) and Epstein-Barr virus (EBV) associated proteins. A multiplex polymerase chain reaction approach revealed a clonal T cell population and an oligoclonal B cell population. Based on these results, the diagnosis was ALK-negative anaplastic large cell lymphoma with null/T cell phenotype. Clinical stage was IAE. CHOP-chemotherapy resulted in complete clinical and histological remission, which was evidenced by computer tomography, positron emission tomography, and negative rectal histology. Polymerase chain reaction analysis of the rectal biopsies revealed no T cell receptor gene rearrangement.

Three months later, the patient presented with postobstructive pneumonia. Transbronchial biopsies showed a diffuse large B cell lymphoma. In contrast with the preceding rectal biopsies, bronchial tumour cells were positive for CD20, EBER, EBNA2, and LMP-1, indicating EBV infection of latency type III, were detected in tumour cells.
However, tumour cells were negative for CD30 and ALK protein. Molecular analysis demonstrated a monoclonal immunoglobulin heavy chain rearrangement in the absence of a T cell receptor rearrangement, confirming the diagnosis. The tumour was neither a T cell receptor rearrangement, confirming heavy chain rearrangement in the absence of demonstrated a monoclonal immunoglobulin.

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Table 1: Clinical characteristics and methylenetetrahydrofolate reductase (MTHFR) and transcobalamin (TCN) polymorphisms in 72 patients with ulcerative colitis (UC) and 111 controls from central China

<table>
<thead>
<tr>
<th>Genetic polymorphisms (n, %) [95% CI]</th>
<th>UCn7 (N=72)</th>
<th>Controlsn7 (N=111)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTHFR 677T allele</td>
<td>50 (34.7) [27.3–42.7]</td>
<td>91 (41.0) [34.7–42.7]</td>
<td>0.2286</td>
</tr>
<tr>
<td>MTHFR 677TT</td>
<td>10 (13.9) [7.2–23.0]</td>
<td>21 (18.1) [12.4–26.8]</td>
<td>0.3707</td>
</tr>
<tr>
<td>MTHFR 1298 C allele</td>
<td>18 (25.0) [10.8–20.7]</td>
<td>41 (18.6) [13.3–22.9]</td>
<td>0.2889</td>
</tr>
<tr>
<td>MTHFR 677CT/1298AC</td>
<td>4 (6.2) [2.0–14.0]</td>
<td>17 (15.3) [9.5–23.0]</td>
<td>0.0755</td>
</tr>
<tr>
<td>MTHFR 677TT/CT-1298AC</td>
<td>14 (21.2) [12.6–32.0]</td>
<td>38 (34.2) [25.9–43.3]</td>
<td>0.0659</td>
</tr>
<tr>
<td>TCN 776G allele</td>
<td>62 (83.1) [53.6–72.3]</td>
<td>138 (60.0) [53.6–66.2]</td>
<td>0.5709</td>
</tr>
<tr>
<td>TCN 776CG/CC</td>
<td>42 (58.7) [74.3–93.6]</td>
<td>89 (77.4) [69.9–84.4]</td>
<td>0.2236</td>
</tr>
</tbody>
</table>

In conclusion, our study showed that the genotypes of MTHFR, associated with a decrease in enzyme activity, seemed to be more significantly associated with extension of disease than with the primary risk, at least in central China.

M Chen, B Xia
Department of Internal Medicine and Geriatrics, Zhejiang Hospital and Research Centre of Digestive Diseases, Wuhuan University Medical School, Wuhuan, RP China

R M Rodriguez-Gueant, M Bigard, J-L Gueant
INSERM-0014 and Department of Hepato-Gastroenterology, Medical Faculty and University Hospital Centre, University of Nancy, Nancy, France

Correspondence to: Dr J-L Gueant, INSERM-0014 and Department of Hepato-Gastroenterology, Medical Faculty and University Hospital Centre, University of Nancy, Nancy, France; j-l.gueant@chu-nancy.fr
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Conflict of interest: None declared.

Figure 2: Operated patients on the X-axis and months after diagnosis on the Y-axis. The line represents the correlation between the two variables.

References

Correction
The original article by Cosnes et al (Impact of the increasing use of immunosuppressants in Crohn’s disease on the need for intestinal surgery. Gut 2005;54:237–41), published in the February 2005 issue was incomplete. Figure 2 was missing from the proof. A corrected version of the pdf can be viewed at http://gut.bmjournals.com/cgi/data/54/2/237/DC1/1, and the missing figure can be seen here.

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Inflammatory bowel disease stimulates formation of carcinogenic N-nitroso compounds
T M C M de Kok, L G J B Engels, E J Moonen and J C S Kleinjans

Gut 2005 54: 731
doi: 10.1136/gut.2004.057471