LETTERS TO THE EDITOR

Markers to study human colonic cell proliferation

EDITOR,—We noted with interest the paper by Kubben et al (Gut 1994; 35: 530–5) on a comparison between proliferating cell nuclear antigen (PCNA) and ex vivo bromodeoxyuridine (BrdU) labelling. We have compared PCNA labelling in 86 human colorectal tumours to iododeoxyuridine (IudR) labelling after in vivo administration using both flow cytometric and immunohistochemical methods.1

In contrast with the authors’ findings, we have not found a significant correlation between the two labels. This was despite correcting for the presence of IudR labelled daughter nuclei (a problem that has not been discussed in this paper) and using a variety of fixatives when assessing PCNA labelling. In our experience, the strongest correlation seen has been on comparison between IudR labelling assessed immunohistochemically and PCNA labelling after fixation in methanol (r=0.38, p<0.015). Fixation methods seem to affect the identification of PCNA in different parts of the cell cycle2 and the apparently higher expression of PCNA than BrdU in Kubben’s paper reflects this.

As we have stated before,3 we feel that in comparisons such as this, it is necessary to analyse much a greater number of specimens from a greater number of subjects and attach less clinical significance to a weak correlation that is statistically significant.

M S WILSON
P F SCHOFIELD
Department of Surgery, Christie Hospital NHS Trust, Manchester M20 9BX


Reply

EDITOR,—We are grateful to Wilson and Schofield for their comment on our study. Wilson and Schofield did not find a significant correlation between proliferating cell nuclear antigen (PCNA) and in vivo iododeoxyuridine (IudR) immunohistochemistry in 86 human colorectal tumours. The higher expression of PCNA than BrdU in our study they ascribe to the fixation method used.

Two populations of PCNA are present during S phase. One is nucleoplastic, present in short term G2 cells, and not apparent in cells fixed in organic solvents such as methanol or ethanol. The other form is associated with DNA replication sites and cannot be extracted with organic solvents.1–3

Our results are comparable with those of Weisgerber et al.,4 who used an organic solvent as fixative as well, and slightly lower of those of Risio et al.,5 who used formalin fixation (Table). Risio showed a decreasing correlation between PCNA and BrdU immunohistochemistry with increasing dysplasia of the tissue under investigation.

The progressive increase of PCNA expression with increasing dysplasia seems to be related to both hyperproliferation and neoplastic deregulation of PCNA synthesis. Although they do not provide sufficient technical details, the interesting results of Wilson and Schofield are in agreement with our study and the work of Weisgerber et al and Risio et al.

F J G M KUBBEN
A PEETERS-HASEEVOETS
L G J B ENGELS
G M I BAETEN
B SCHUTTE
J W ARENDS
R W STOCKBRUGGER
G H BLIJHARM
Academic Department of Internal Medicine, Maastricht, The Netherlands

Correspondence to: Dr F J G M Kubben, University Hospital, Department of Gastroenterology and Hepatology, Building 1, GL-D, PO Box 5060, 2300 RC Leiden, The Netherlands


Duodenal ulcer, gastric acid, and Helicobacter pylori

EDITOR,—Professor Hobson’s group (Gut 1994; 35: 1033–6) found significant decrease in maximal histamine acid secretion corrected for pyloric loss, duodenogastic reflux, and stasis in patients with duodenal ulcer or non-ulcer dyspepsia who were H pylori positive. We have four questions. (1) What were the results with the one hour basal acid output? (2) Why were only 68% (21 of 31) of the duodenal ulcer group H pylori positive with active chronic gastritis? The usual proportion of H pylori positivity in duodenal ulcer is 95%, and superficial or atrophic antral gastritis is almost invariable in duodenal ulcer. (3) The decrease in acid is significant only in the corrected data. Was either pyloric loss significantly reduced or duodenogastic reflux significantly increased in those infected with H pylori? (4) They speculate that the reduced acid in the H pylori positive duodenal ulcer group results from destruction of parietal cells: we wish to assess these specimens taken to test this hypothesis? And have any of the patients had their H pylori eradicated, and did this increase their acid output?

J H BARON
A W HARRIS
Parkside Helicobacter Study Group, Gastroenterology Unit, St Mary’s Hospital, London W2 1NY

Correlation of BrdU and PCNA immunohistochemistry on human colorectal tissue

<table>
<thead>
<tr>
<th>Author</th>
<th>Tissue</th>
<th>Subjects (n)</th>
<th>r</th>
<th>p Value</th>
<th>Mab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kubben</td>
<td>Normal</td>
<td>16</td>
<td>0.63</td>
<td>&lt;0.05</td>
<td>19A2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
<td>0.91</td>
<td>0.011</td>
<td>19A2</td>
</tr>
<tr>
<td></td>
<td>Low grade adenoma</td>
<td>50</td>
<td>0.57</td>
<td>&lt;0.001</td>
<td>PC10</td>
</tr>
<tr>
<td></td>
<td>High grade adenoma</td>
<td>21</td>
<td>0.43</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Wilson</td>
<td>Adenocarcinoma</td>
<td>20</td>
<td>0.23</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adenocarcinoma</td>
<td>86</td>
<td>0.38</td>
<td>0.015</td>
<td>PC10</td>
</tr>
</tbody>
</table>

Mab=monoclonal antibody against proliferating cell nuclear antigen; r=correlation coefficient.

Reply

EDITOR,—We thank Drs Baron and Harris for their interest. We reply to their four questions.

(1) The mean results of the one hour output are shown in Table 1. The mean result of the one hour output was 5.14 mmol/h, Vg 111 ml/h. H pylori positive (n=21), basal acid output 4.97 mmol/h, Vg 110 ml/h. (2) We do not know why only 68% of our duodenal ulcer group were H pylori positive, although some evidence bearing on this point has been submitted for publication. We agree that 95% is commonly quoted, but in five recent publications the values were 67%,5 52.6%,6 66.6%,7 76.9% and 50%8 (weighted average depth). (3) The plateau/average values (SD) of duodenogastic reflux (ml/min) and basal acid output (ml/min were (H pylori positive first) -0.61 (2.6), 2.1 (3.2); 4.5 (6.8), 5.7 (6.7). The positive and negative patients did not differ significantly from each other. (4) Body biopsy specimens were not taken, hence the speculative nature of our suggestion. Some of the patients had their H pylori eradicated.9 Acid output was not measured after eradication.

M HOBSELY
Department of Surgery UCL Medical School, Charles Bell House, 67-73 Riding House Street, London W1P 7LD


