Highlights from this issue

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Ancestral origin of *Helicobacter pylori* strains predicts risk of gastric cancer

Helicobacter pylori infects half the world and causes significant gastro-dudenal disease including gastric neoplasia. Generally, gastric cancer rates correlate with *H pylori* prevalence but in some areas there are regions where infection is nearly universal, but rates of gastric cancer are low. In Colombia, there is a 25-fold increase in gastric cancer rate in the Andean mountain (high risk) region compared to the coastal (low risk) region, despite similarly high (90%) prevalence of *H pylori* in the two locations. In this landmark study, de Sablet and colleagues investigated the ancestral origin of *H pylori* strains isolated from subjects in these high- and low-risk regions and determined whether this is a predictive determinant of precancerous lesions. Remarkably, they show that strains from the high-risk region were all of European phylogeographic origin, whereas those from the low risk region were of either European (34%) or African origin (66%). Furthermore, they show that European strain origin was strongly predictive of increased premalignant histological lesions and epithelial DNA damage, even in the low-risk region; African strain origin was associated with reduced severity of these parameters ***(see page 1189)***.

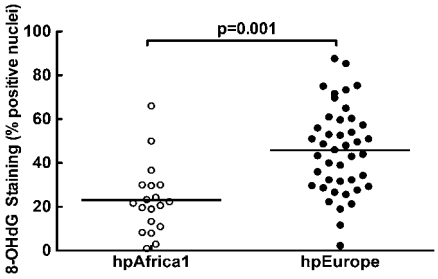

Figure 5B Detection of oxidative DNA damage in gastric biopsies by quantification of 8-OHdG-positive epithelial cell nuclei, stratified by region of origin.

The Asia-Pacific Colorectal Screening score

Consensus guidelines recommend screening for colorectal cancer at age 50 years and above in an average risk population. However, despite widespread adoption of guidelines by professional bodies, the actual uptake and implementation of screening remains low in many countries, in part due to resource limitations. In this issue of Gut, The Asia Pacific Working Group on Colorectal cancer report on the development and validation of a clinical risk score predictive of risk for colorectal advanced neoplasia for Asia. The new proposed Asia-Pacific Colorectal Screening score enables risk stratification using elementary clinical information on age, gender, family history and smoking (table 1). This is simple and can be used by general practitioners or nurse-educators. The Asia-Pacific Colorectal Screening score successfully predicts the risk of colorectal advanced neoplasia in asymptomatic Asian subjects. High risk groups have fourfold higher risk compared with the average risk group. This simple score will prove effective in selecting high risk asymptomatic Asian subjects and will also hopefully encourage a better uptake of the screening Programme by highlighting the risk ***(see page 1236).***

Table 5 Asia-Pacific Colorectal Screening score for prediction of risk for colorectal advanced neoplasia

Risk factor	Criteria	Points
Age	<50	0
	50–69	2
	≥70 yrs	3
Gender	Female	0
	Male	1
Family hx of CRC in a 1st degree relative	Absent	0
	Present	2
Smoking	Never	0
	Current or past	1

Hepatology

HBV quasispecies complexity after 4 weeks of treatment with nucleoside analogues—a predictor of response?

Antiviral therapy is not effective in all patients with HBV. While attention focuses on the effects of nucleos(t)ide analogues on HBV DNA levels other early predictors of response would be helpful. This interesting paper from Shanghai introduces a novel approach to predict long-term virological response after 4 weeks of antiviral treatment. Patients with chronic HBV receiving entecavir or lamivudine were investigated for HBV quasispecies complexity and diversity. Interestingly, quasispecies complexity—which means the number of quasispecies variants in a single sample—at week 4 of treatment was lower in responders than in partial responders (figure 3). These evolutionary differences in quasispecies may suggest new mechanisms of antiviral resistance which should be investigated further ***(see page 1269).***

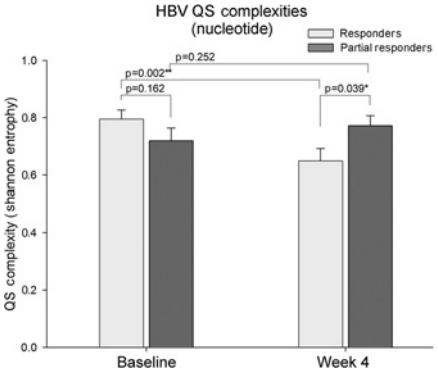

Figure 2A HBV quasispecies complexity at week 4 decreases in responders.

Luminal GI

A better mousetrap?

In this issue of *Gut*, Marshall and colleagues have assessed the value of a clinical scoring system for identifying people with a high likelihood of having colorectal cancer. Despite the availability of screening, the majority of colorectal cancers are still diagnosed after presentation with symptoms. Accurately identifying which patients suspected of having colorectal cancer are the most likely to have cancer is a clinical problem because the signs and symptoms are often non-specific. In this paper, the authors have derived a new system, the Bristol–Birmingham (BB) equation and have compared its performance with the NICE

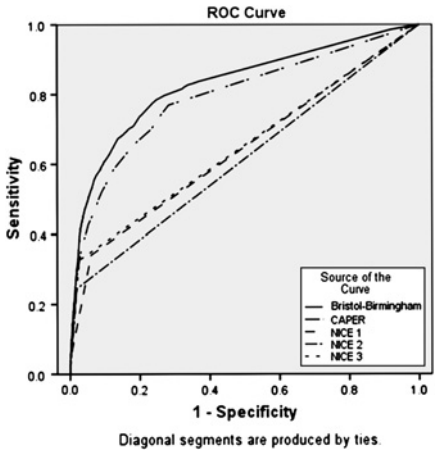

Figure 1 Receiver operating characteristics curves for a diagnosis of colorectal cancer in the THIN dataset using the Bristol-Birmingham equation, the CAPER score and three algorithms based on NICE guidelines.

referral guidelines and the CAPER score, which are two currently available scoring systems. The new BB equation and the CAPER score are markedly better at discriminating between patients with and without colorectal cancer than current NICE guidelines. These findings suggest that the automated identification of patients with symptoms of suspected colorectal cancer from electronic primary care records using either the BB equation or the CAPER score could enhance general practitioners' ability to diagnose suspected colorectal cancer compared with current strategies (***see page 1242***).

A new way to treat colon cancer

Mutations in the APC or ß-catenin genes are common in colon cancer. One of the consequences of these mutations is the activation of the Wnt signalling pathway which helps stabilise ß-catenin so that it can translocate to the nucleus where it induces the expression of cancer-promoting genes. In this issue of *Gut*, Van Veelen and colleagues demonstrate that the modification of a specific site on ß-catenin, tyrosine 654, helps stabilise the protein and promote its ability to induce the expression of cancer-causing genes. The phosphorylation of tyrosine 654 appears to be the consequence of growth factors made by the stromal cells surrounding the tumour. In a mouse model of intestinal cancer, the authors show that the tyrosine 654 phosphorylation of ß-catenin appears to strongly enhance Apc-driven intestinal tumour initiation, but does not affect the progression to a more aggressive tumour phenotype. Their results suggest that therapy targeted at the tumour stroma or tyrosine kinases activated by the stroma-derived growth factors may be a novel treatment strategy for patients with colon cancer (***see page 1506***).

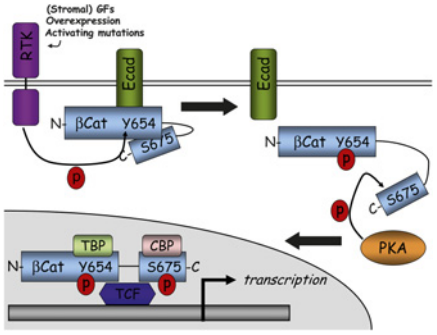

Figure 7 Schematic diagram of Wnt signalling pathway and effects of ß-catenin tyrosine 654 phosphorylation.