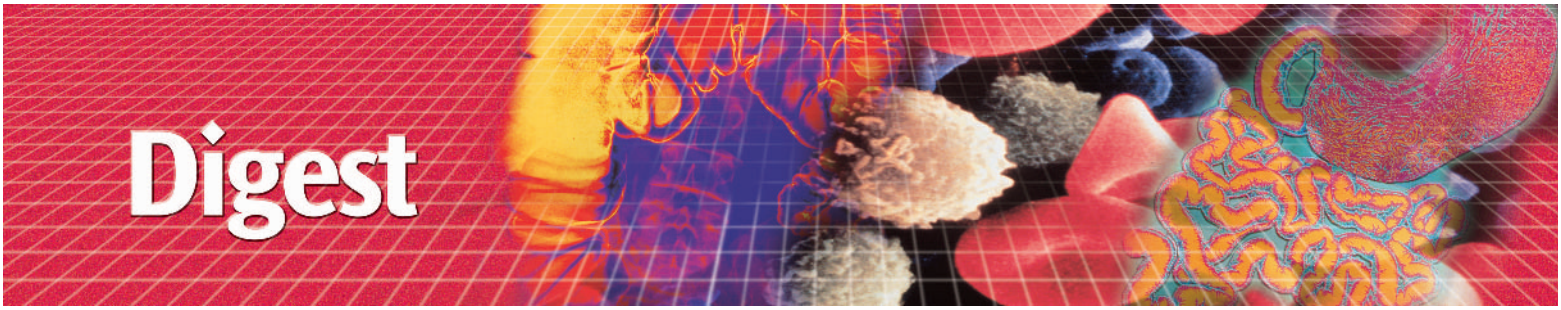

Robin Spiller, *Editor*

HOW *H PYLORI* INDUCES APOPTOSIS

While the association of *H pylori* infection with gastritis, ulcers and cancer have been recognised for many years it is only now that the molecular mechanisms are starting to be understood. Ashktorab and colleagues **[see page 805]** assessed the effects of *H pylori* co-incubation on the mitochondria of various cell lines. Within 3 hours the pro-apoptotic protein Bax is translocated to the mitochondria. The mitochondria are depolarised and fragmented within 4 or 5 hours of incubation. By using cells which lack functional p53 they showed that the effect of *H pylori* was partially mediated through this pathway and could be blocked by the cytoprotective oncoprotein Bcl-2. This opens the way to further work to identify the individual characteristics of host or bacteria which determine whether the end result of this interaction is ulceration or cancer.

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ANTI-INFLAMMATORY EFFECTS OF PROBIOTICS

There is increasing interest in the potential beneficial effects of probiotic bacteria. This issue of Gut contains an article **[see page 821]** which analyses the possible mechanisms of one of these benefits, namely an anti-inflammatory action. Conditioned media from cultures of the lactic acid bacteria (*Bifido bacterium breve* and *Streptococcus thermophilus)* inhibited the production of tumour necrosis factor (TNF) by peripheral blood mono-nuclear cells challenged with lipopolysaccharide. Commensal bacteria showed a much smaller effect. By growing the bacteria on a polarised monolayer they showed that active metabolites from the probiotics were able to cross the intact epithelial barrier and still exert an anti-inflammatory effect particularly in the presence of interferon-γ. This work should facilitate the design of more effective probiotic bacteria which could become part of the treatment for inflammatory bowel disease.

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IS ASYMPTOMATIC PRIMARY BILIARY CIRRHOSIS (PBC) REALLY BENIGN?

Although the first descriptions of PBC were of severely jaundiced patients suffering from intractable pruritis, the ability to screen patients with auto antibody profiles lead to PBS being frequently diagnosed in the asymptomatic phase. Initial impressions were that patients detected in this way had a relatively benign condition. The Newcastle Group report the largest population-based cohort study of the prognosis of PBC **[see page 865]** and come to some striking conclusions. Seven hundred and seventy patients diagnosed between 1987 and 1994 were followed until the year 2000. Although deaths from liver failure or variceal haemorrhage accounted for 44% of those initially symptomatic compared with only 25% of those initially asymptomatic, surprising survival did not differ between these groups. The similar survival related to an excess of non-hepatic deaths in the asymptomatic group, the commonest of which were malignancies, respiratory and cardiovascular deaths. Many of the initially asymptomatic patients became symptomatic and ultimately 20% of them either died from liver disease or required transplantation. Only a very small proportion of asymptomatic patients received any therapy in this study, an attitude which the authors now question.

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SALIVARY ACETALDEHYDE AND INCREASED CANCER RISK IN HEAVY DRINKERS WITH THE ALCOHOLIC DEHYDROGENASE 1C*1 ALLELE

Excess alcohol, smoking and poor oral hygiene are just some of the risk factors which contribute to the increased risk of upper aerodigestive tract cancer (UADT) in alcoholics. However, not all alcoholics develop this complication and the current study **[see page 871]** explored one possible explanation. Experimental evidence suggested that acetaldehyde is a carcinogen. Alcohol is converted to acetaldehyde by the enzyme alcohol dehydrogenase (ADH) which exhibits genetic polymorphism. The enzyme encoded by the ADH 1C*1 allele metabolises ethanol to acetaldehyde 5 times faster than that encoded by the ADH 1C*2 allele. The authors found the ADH 1C*1 allele to be significantly more frequent in alcoholics with UADTC (62%) compared with alcoholics without UADTC (49%). They also showed that the homozygote for ADH 1C*1 had higher salivary acetaldehyde than either heterozygote or ADH 1C*2 homozygote. Similarly high level of salivary acetaldehyde is also found in Asians, a high percentage of whom have a less active form of aldehyde dehydrogenase (ALDH2), which allows acetaldehyde to accumulate and appear in the saliva. This allele is also significantly increased in Japanese alcoholics with UADTC. These data certainly support the idea that salivary acetaldehyde might be the link between alcohol excess and UADTC .

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