Testing for conditions prior to endoscopy

One approach to address this issue, which is increasingly being recognised for its clinical utility, is to perform functional serology for three key stomach-specific biomarkers – pepsinogen I, pepsinogen II and gastrin-17 – in addition to testing for anti-*H. pylori* antibodies (GastroPanel, BIOHIT HealthCare). This multiplexed approach has been identified as a more clinically relevant method of diagnosis than just *H. pylori* testing on its own, as it enables the evaluation of stomach-specific biomarkers that play very distinct roles, and are secreted by different structures within the stomach lining. This gives insights into the function and structural integrity of the whole gastric mucosa, as well as an indication of the location of any damage. Furthermore, this test can help to identify the cause of complaints – i.e. whether the condition is autoimmune or stems from an *H. pylori* infection.

The recent Maastricht VI/Florence Consensus report identified gastric functional serology as an important method for providing complementary diagnostic information in various scenarios, including investigating dyspepsia in patients >50 years of age, and for the clinical follow up of *H. pylori* eradicated gastritis patients.[16] The report also outlined that gastric mucosal atrophy – a major precursor of non-hereditary gastric cancer – can be reliably determined by serum pepsinogen measurements, as results strongly correlate with the gold standard gastric biopsy histology assessments.[16] These detailed guidelines have evolved over the last few decades to conclude that functional serology is the best non-invasive screening method for pre-neoplastic changes to the gastric mucosa. By implementing functional serology, clinicians can identify those most at risk, simplifying the decision-making process by providing a sound rationale to determine if there is a need for further investigation or surveillance of the condition, and hopefully streamlining referral to endoscopy.

The Maastricht VI/Florence Consensus report also proposed that combining serological testing of *H. pylori*, pepsinogen I and pepsinogen II tests with national colorectal cancer screening programmes would be cost effective in countries with intermediate and high gastric cancer. In some parts of Asia, this combined assessment of serum pepsinogens and *H. pylori* is already being used for population screening against gastric adenocarcinoma, although there is limited data to determine whether a screening approach would be appropriate in low-risk populations such as the UK.[17] However, it is evident that there is ▶

COMMENT with DR KLAUS MERGENER

20 years in GI: key advances

Dr. Klaus Mergener is the past-president and a member of the Governing Board of the American Society for Gastrointestinal Endoscopy (ASGE), one of the world's largest professional organisations for GI endoscopists. He continues to work as a clinical gastroenterologist and endoscopist in the US and serves in a part-time capacity as the global chief medical officer of Pentax Medical. Here, he reflects on changes in GI medicine and offers some predictions for the future.

From a treatment perspective, there have been a number of amazing innovations in medical therapies, over the past 20 years. In our field of GI, diseases that used to result in organ failure and cancer (for example, Hepatitis C and B), can now be cured with medical therapies. Inflammatory bowel disease, especially Crohn's, for which we had only very limited number of drug therapies now have a large number of new 'biologic' drugs that can be used to treat and control this chronic disease, thereby helping many IBD patients avoid the previously often dire long-term consequences of their disease.

From a MedTech innovation perspective, our field of GI endoscopy has seen a number of important innovations over the last 20 years. The imaging capabilities of GI endoscopes have continued to improve significantly. We now have the ability to use optical enhancement technology and wider fields of view in order to find more lesions (e.g. colon polyps) and characterise them better.

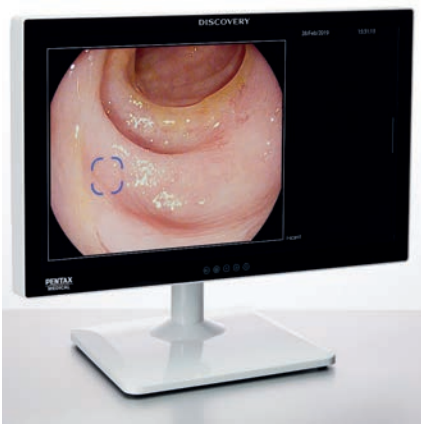
What has changed?

We have developed new endoscopic treatments, for example endoscopic submucosal dissection techniques (ESD) to remove early cancers and bariatric endoscopy techniques to provide patients with minimally invasive treatment options for weight loss.

From the physician/provider perspective, reimbursements per service delivered have generally gone down, while the overall cost of delivering healthcare, including the general cost of living, have gone up. This results in providers having to 'run faster' (e.g. do more, see more patients, etc.), which means higher volumes/throughput are required. This runs a risk of not spending sufficient time with the individual patient anymore, to address their individual needs.

What does the future hold?

Looking into the future, there are still significant opportunities for further improvement in GI endoscopy. We need to continue to optimise resection techniques, find easier ways of suturing through the endoscope and resecting even larger lesions without the need to resort to open surgery. We should be able to simplify the way endoscopes are being manoeuvred, transitioning from the traditional mechanical steering mechanism of the last 60 years, to electronic ways of steering an endoscope. We are beginning to employ artificial intelligence in all aspects of GI endoscopy, to better detect and characterise lesions, to help plan the resection, to assist in generating procedure reports, perform quality assurance, and to assist with automatic purchasing.



Last but not least, we are exploring ways to make GI endoscopy even safer by further improving reprocessing of reusable endoscopes, developing new ways of cleaning, potentially even sterilising endoscopes in between uses, and to determining a potential role for single use instruments in some applications of GI endoscopy.