Improving risk profiling is key to preventing many GI cancers

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Cancers of the gastrointestinal (GI) tract continue to exert their toll across Europe, with many diagnosed too late for effective treatment. Bowel cancer screening programmes are now underway in most European countries, but screening for other GI cancers is patchy and not necessarily well-targeted. Today, experts at United European Gastroenterology (UEG) call for better risk profiling for all GI cancers in order to develop more targeted approaches to their screening and prevention.

"Our growing understanding of the causes of these cancers, coupled with new diagnostic techniques, mean we are in a good position to start developing precision prevention programmes," said Professor Rebecca Fitzgerald from Addenbrooke's Hospital and the University of Cambridge in the UK, speaking at UEG Week 2015 in Barcelona. "These would ensure we triage individuals based on their relative risk and apply the most appropriate screening, prevention and treatment options to each individual."

Precision prevention of oesophageal cancer

Prof. Fitzgerald and colleagues have recently applied the principles of precision prevention to the most common type of oesophageal cancer, known as oesophageal adenocarcinoma. This cancer is usually found in the lower part of the oesophagus, and is often associated with gastro-oesophageal reflux disease (GORD) and its complications. The

incidence of oesophageal adenocarcinoma has risen alarmingly over the past few decades, and despite treatment improvements, around half of all patients still die within a year of diagnosis.

"We know from studies in the US that only about 7% of people with oesophageal adenocarcinoma are detected using current screening approaches," explains Prof. Fitzgerald. "Our theory is that we are taking the wrong approach to screening and preventing this type of cancer and we are proposing a new approach to risk stratification that could be applied to other GI cancers."

A five-tier strategy

According to Prof. Fitzgerald's new five-tier model of precision prevention, screening and preventative approaches for oesophageal adenocarcinoma would differ according to absolute risk.1 People at the lowest risk levels (levels 1 and 2) would be encouraged to make lifestyle changes to reduce their risk, with primary care physicians assessing demographic risk factors (e.g. age, sex and race), recurrent reflux symptoms, family history and potential biomarkers in the blood and/or urine. Non-invasive techniques for oesophageal tissue sampling (such as Cytosponge) and additional biomarker and genetic analyses would be applied in primary care to those at risk level 3, while secondary care endoscopy would be reserved for screening only those at risk level 4. At the highest risk level (level 5), patients would be referred to, and managed in, tertiary care.

"If this protocol was applied on a population-wide basis, it would include many at-risk individuals who are not covered by current screening practices," said Prof. Fitzgerald. "Stratifying risk in this way and applying risk-appropriate screening and prevention options would be cost-effective and detect many more cases of oesophageal cancer in their early stages."

"OMICs" and genetic analysis

New methods of predicting the risk of, and identifying, different GI cancers are currently being evaluated and could help to inform precision prevention models such as the one proposed by Prof. Fitzgerald. Genetic analysis is already used to predict risk in several different types of cancer, and scientists have recently found a cluster of genetic mutations that help to predict the risk of Lynch syndrome (also known as hereditary non-polyposis colorectal cancer). Metabolomics, which analyses body fluids and tissue samples for particular chemicals, is a relative new technique that also looks promising for the detection of stomach cancer.

"We are poised on the brink of having new techniques that should help us predict the risk of GI cancers in the future, ensure we prevent those we can, and detect many others far earlier than we do now," said Prof. Fitzgerald.

More information: References:

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3. Chan AW, Gill RS, Sawyer MB. World J Gastroenterol 2014;20:12874-82.

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