

## Reducing time to diagnosis in gastroesophageal cancer is key to further improve outcome

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With a growing and aging population, cancer is and will remain a continuous health challenge. In particular, upper gastrointestinal cancers take a substantial share in the global cancer burden.<sup>1</sup> Although 5-year survival rates of various cancer types have improved, gastroesophageal cancer has remained low on the list.<sup>2,3</sup> As signs of malignant obstruction mostly manifest when the tumour has invaded locoregional or even distant structures, many patients with gastroesophageal cancer present at an advanced stage, resulting in poor survival in this group.<sup>4</sup>

Two main strategies are available to improve cancer outcome; that is, early detection and more effective treatment. Ideally, gastroesophageal cancers should be diagnosed at an early stage when treatment is still effective and the likelihood of survival is high. A way to do so is to reduce undesirable delays in diagnosis and treatment. However, much is still unknown about the complex prognostic relationship between the diagnostic pathway and outcome. Delays in the diagnostic pathway; that is, from the first symptom to start of treatment, may occur at the patient level or system level in primary or secondary care.<sup>5</sup>

In this issue of the *United European Gastroenterology Journal*, van Erp and colleagues evaluated the duration of different intervals in the diagnostic pathway of gastroesophageal cancer.<sup>6</sup> In this retrospective registry-based study, the authors identified patients registered with oesophageal or gastric cancer in the databases of six large general practice networks in The Netherlands. An attempt was made to reconstruct the diagnostic pathway through record linkage with the Netherlands Cancer Registry including information on clinical tumour stage. Four relevant intervals were assessed: patient interval (first symptoms to first presentation); primary care interval (first presentation to referral); secondary care interval (referral to diagnosis); and the diagnostic interval (first presentation to diagnosis). The analysis included 312 patients, with 174 oesophageal and 138 gastric cancers. When referred to secondary care, 60% of patients already had cancer-specific alarm symptoms. An important

conclusion was that prolonged intervals ( $\geq 75$ th percentile value) were more often seen at the patient level than the system level, a finding also supported by others.<sup>7</sup> With a median of 29 days (interquartile range 15–73) patient interval was the longest time frame and had about the same duration as the total diagnostic interval of 31 days (interquartile range 11–74). The absence of cancer alarm symptoms did not affect patient intervals but was associated with prolonged primary and secondary care intervals. Diagnostic intervals were shorter for patients with alarm symptoms and at an advanced stage (stage III/IV).

Regardless of the limitations, extensively discussed by the authors, the study supports three main conclusions with implications for further improvement of cancer outcome.

First, we agree with the authors that it is doubtful whether further system interval reductions will result in more detection of early-stage tumours. It is important to realise that the data represent a modern healthcare system with different mechanisms in place for quality governance aiming to reduce lead time. The reported short diagnostic intervals indeed reflect a highly operational and standardised healthcare system. In fact, fast track diagnostic pathways have been implemented for various types of cancer in The Netherlands with an evident reduction in diagnostic intervals.<sup>8</sup>

Second, more early-stage cancer yield is to be expected from evidence-based strategies that will engage the patient. Individual and community-based cancer awareness programmes have proved fruitful for several cancer types, such as breast cancer, and clearly may be an area of opportunity for gastroesophageal cancer. To establish feasible targets for patient education, a complete understanding of social, psychological and behavioural phases of the patient interval, from the time of symptom recognition to the decision to seek professional medical care, is needed.<sup>9</sup>

Third, effective screening strategies for gastroesophageal cancer and awareness on access to such services may contribute to the detection of early-stage cancer. With the relatively low prevalence of gastroesophageal

cancer in the west and the invasiveness of upper endoscopy, it is reasonable to hypothesise that population-based screening will only become feasible and cost-effective with minimally invasive approaches. In this respect, several promising screening techniques, such as portable electronic nose devices for breath analysis or ingestible devices to collect oesophageal cells for the detection of early oesophageal cancer are currently under investigation.<sup>10,11</sup>

In conclusion, the study based on real-world clinical data confirms that prolonged patient intervals are to a large extent responsible for the diagnostic delays in gastroesophageal cancer. Further insights into mechanisms causing prolonged patient intervals together with advances in minimally invasive screening modalities could open the way for further improvement of patient outcomes in gastroesophageal cancer.

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The author(s) have no conflicts of interest to declare.

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